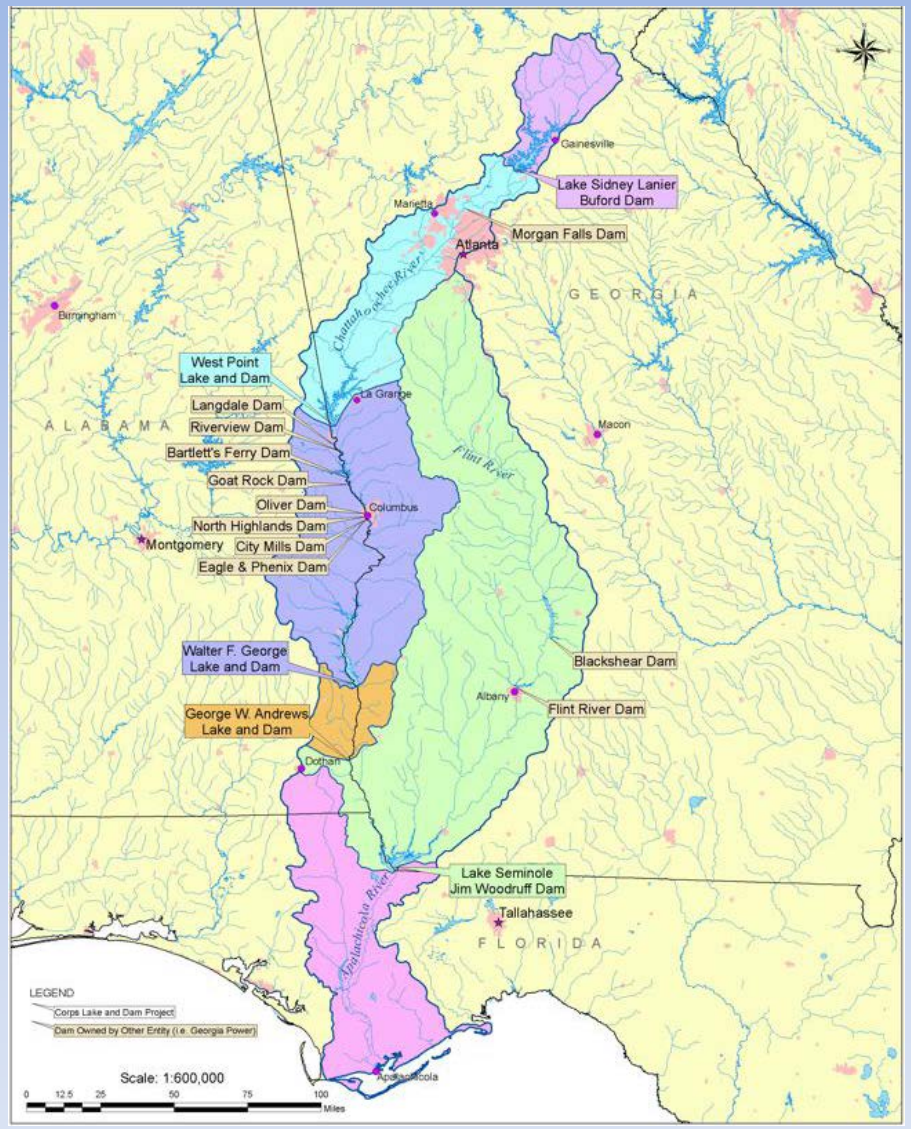
National Integrated Drought Information System

Southeast US Pilot for Apalachicola-Flint-Chattahoochee River Basin

28 May 2013



Outline

Welcome – Keith Ingram, Southeast Climate Consortium

Current drought status – David Zierden, Florida Climate Center, FSU

Streamflows and groundwater – Brian McCallum, USGS

Reservoir status, projections, and operations under plentiful water conditions – Bailey Crane, US ACE

ACE's Updated scoping report: Environmental impact statement update of the water control manual for the ACF – Chris Martinez, University of Florida

Apalachicola Bay Salinity – Jenna Harper, ANERR

Seasonal forecasts and outlooks – David Zierden, FSU

Streamflow forecasts – Jeff Dobur, SERFC

Summary and Discussion – Keith Ingram, SECC

Current drought status from Drought Monitor

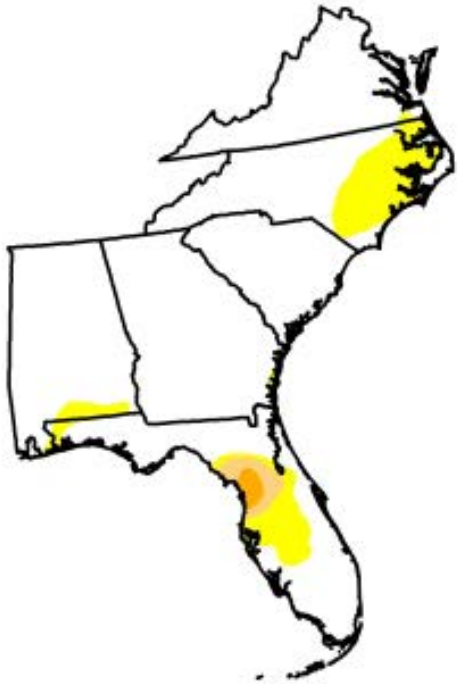
U.S. Drought Monitor

May 21, 2013
Valid 7 a.m. EST

Southeast

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	87.18	12.82	2.04	0.66	0.00	0.00
Last Week (05/14/2013 map)	88.24	11.76	2.04	0.66	0.00	0.00
3 Months Ago (02/19/2013 map)	38.55	61.45	43.76	20.05	6.80	0.00
Start of Calendar Year (01/01/2013 map)	29.15	70.85	45.65	20.64	9.58	2.10
Start of Water Year (09/25/2012 map)	66.49	33.51	17.18	11.50	8.53	3.52
One Year Ago (05/15/2012 map)	17.21	82.79	56.72	44.44	29.83	9.07



Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

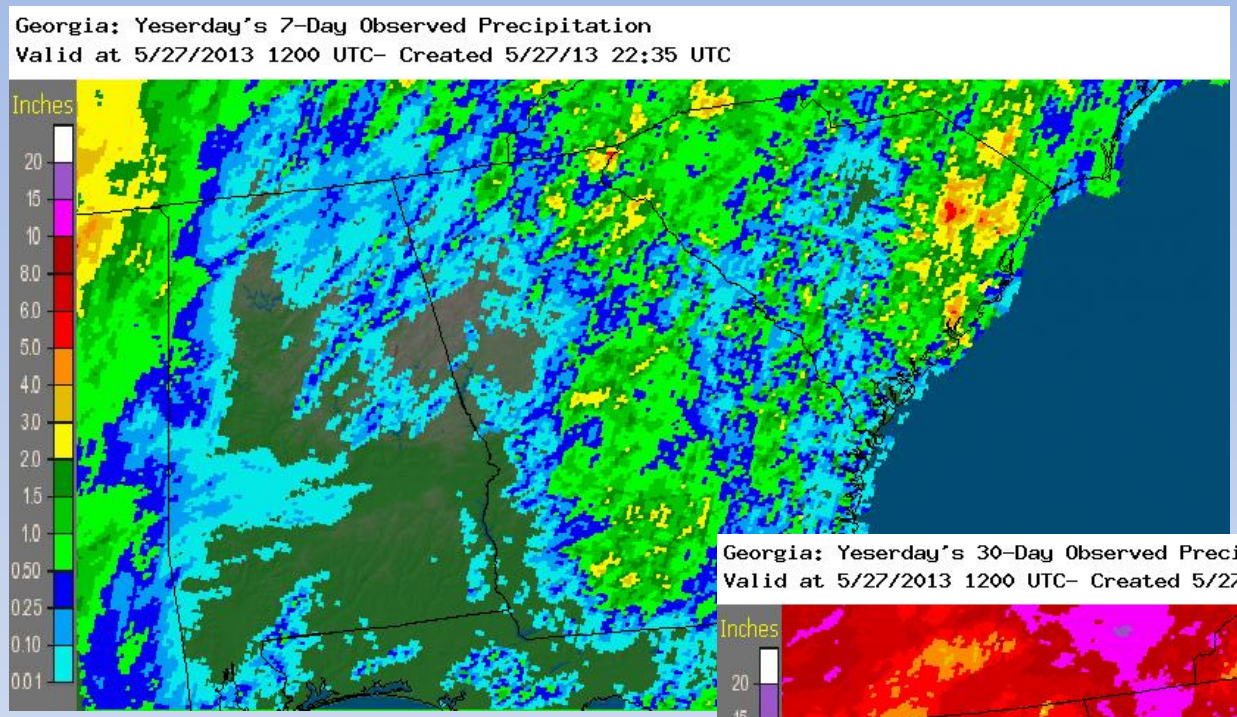
http://droughtmonitor.unl.edu

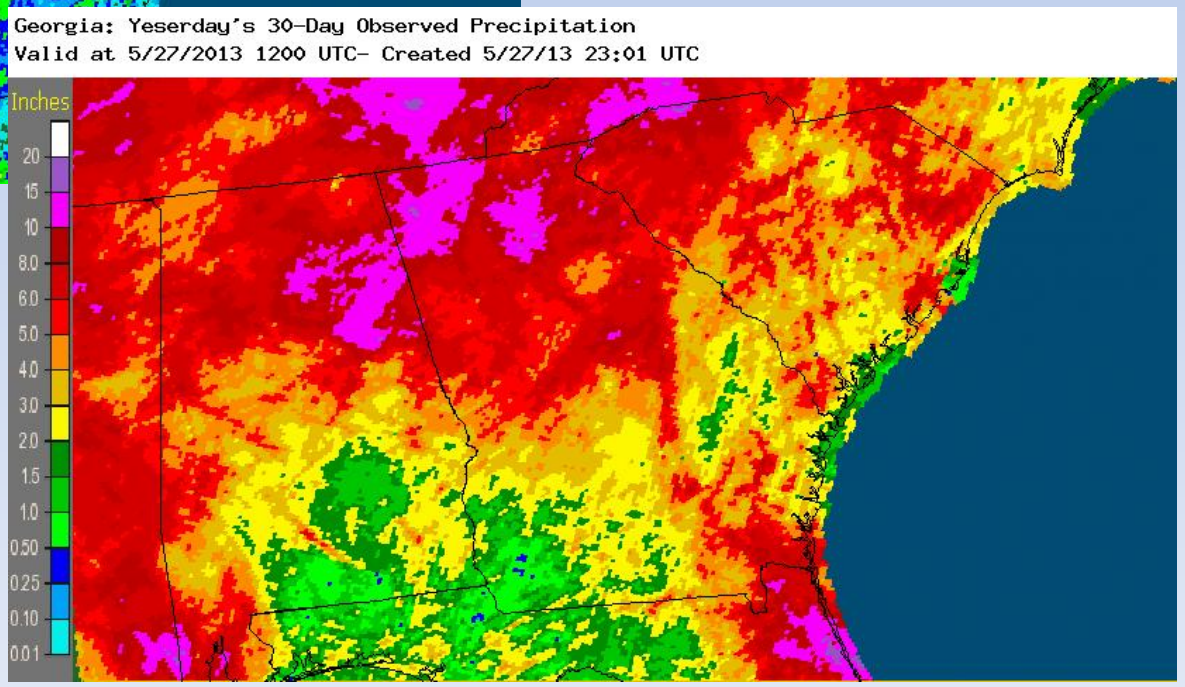
USDA National Drought Mitigation Center

Released Thursday, May 23, 2013
Brad Rippey, U.S. Department of Agriculture

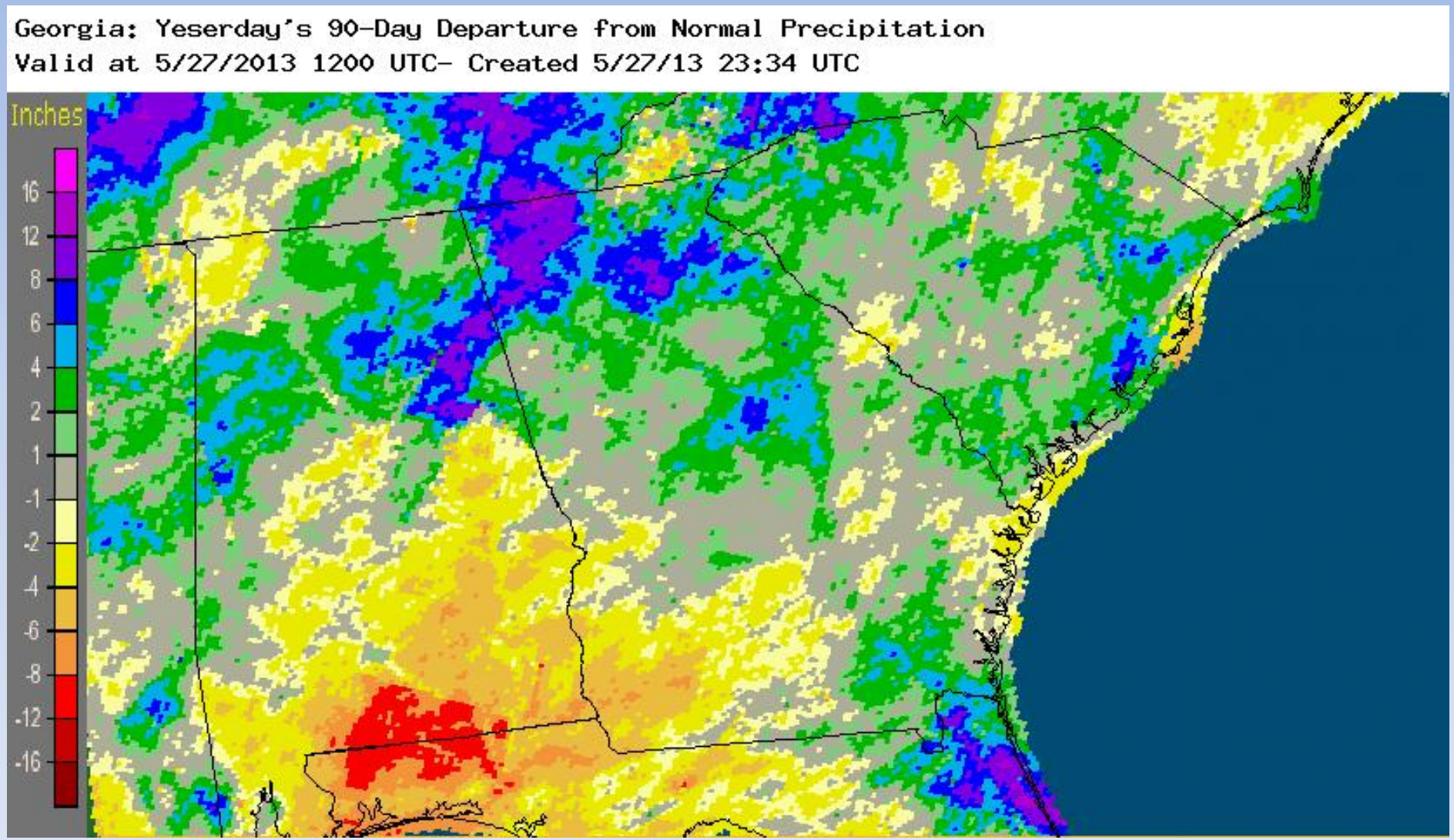
http://www.drought.unl.edu/dm/monitor.html

Recent Precipitation



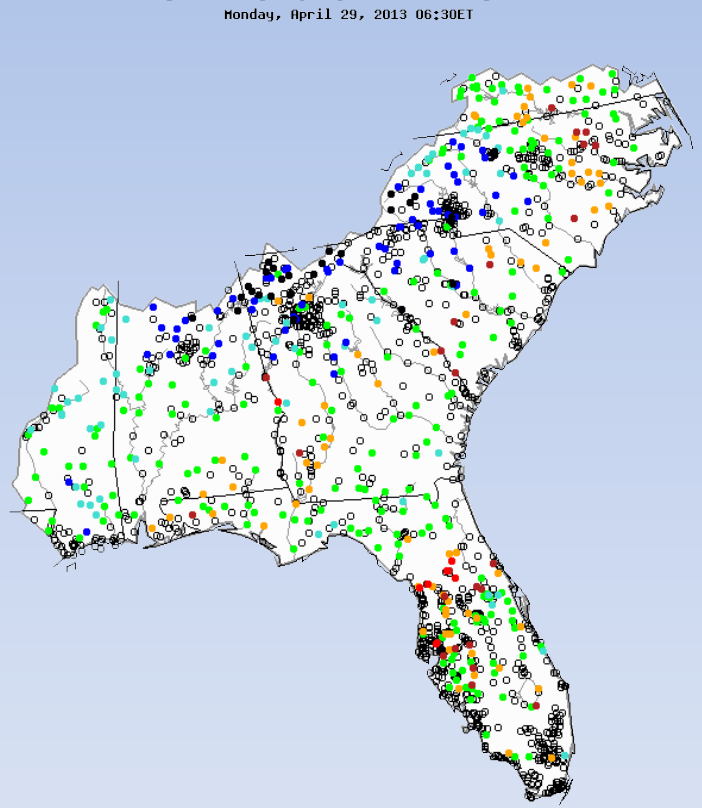


90-Day Rainfall Surplus



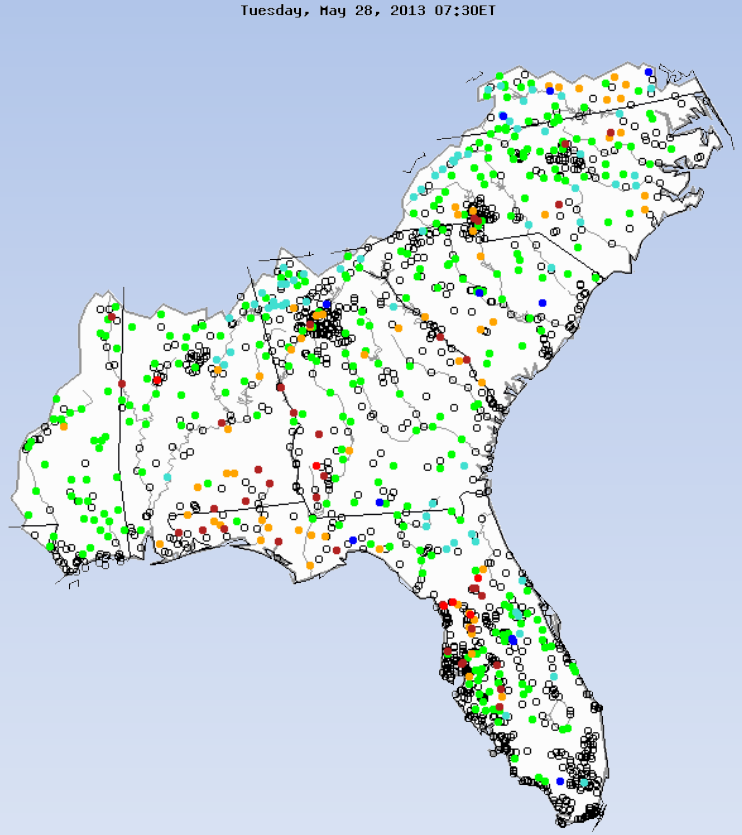
Realtime stream flow compared with historical monthly averages

Previous Brief:



USGS

Current:



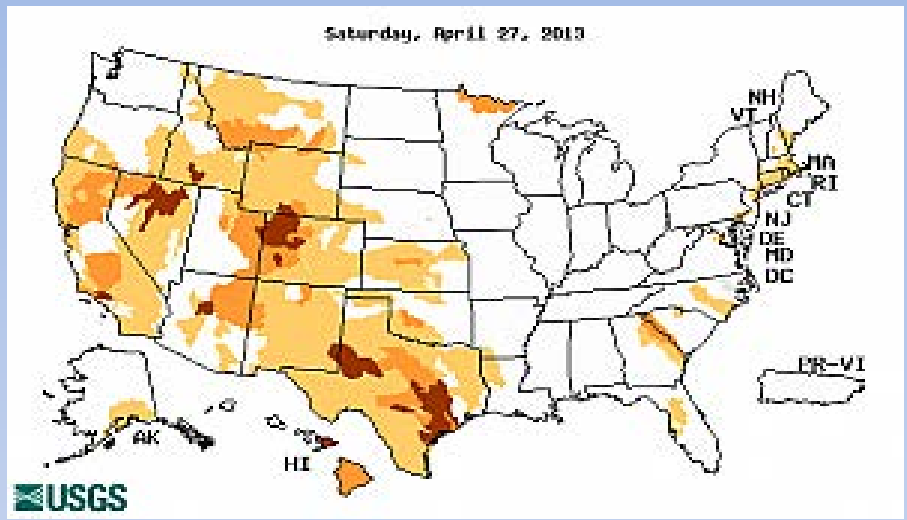
USGS

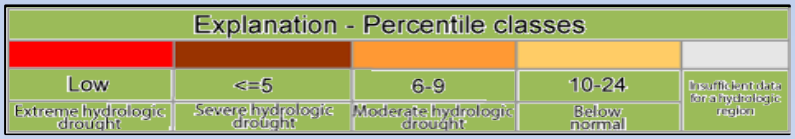
Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

http://waterwatch.usgs.gov

Below Normal 7-day Average Streamflows

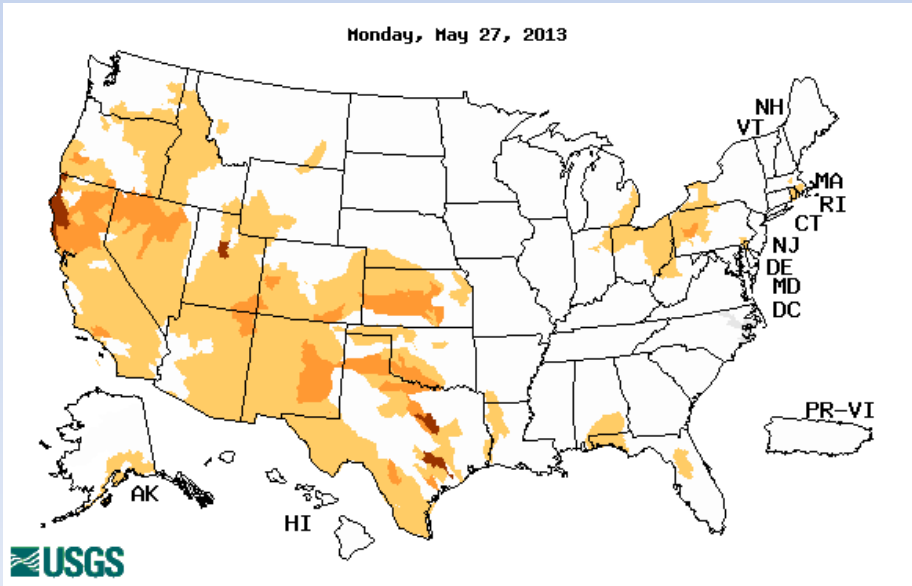
Previous brief:





Below normal 7-day average streamflow as compared with historical streamflow for day shown

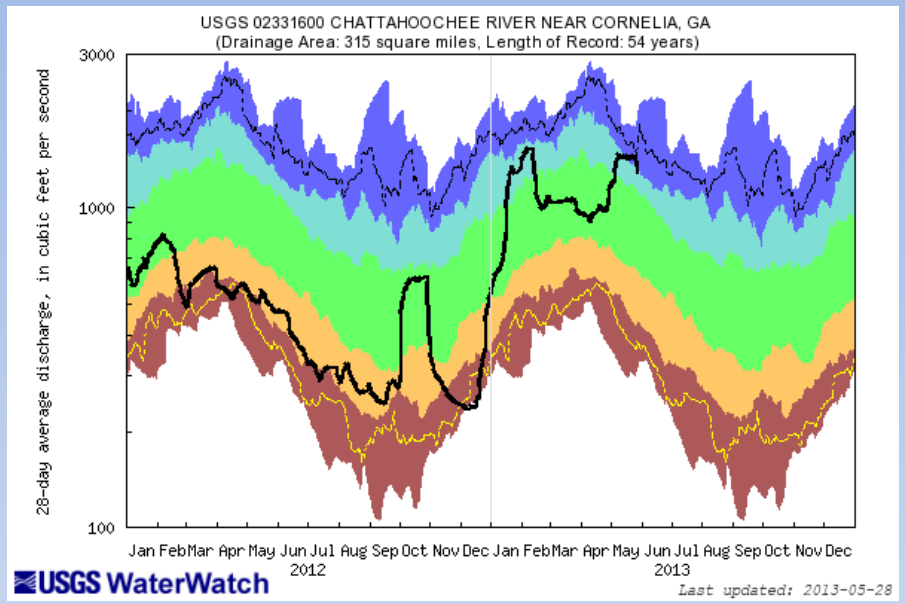
Current:



http://waterwatch.usgs.gov

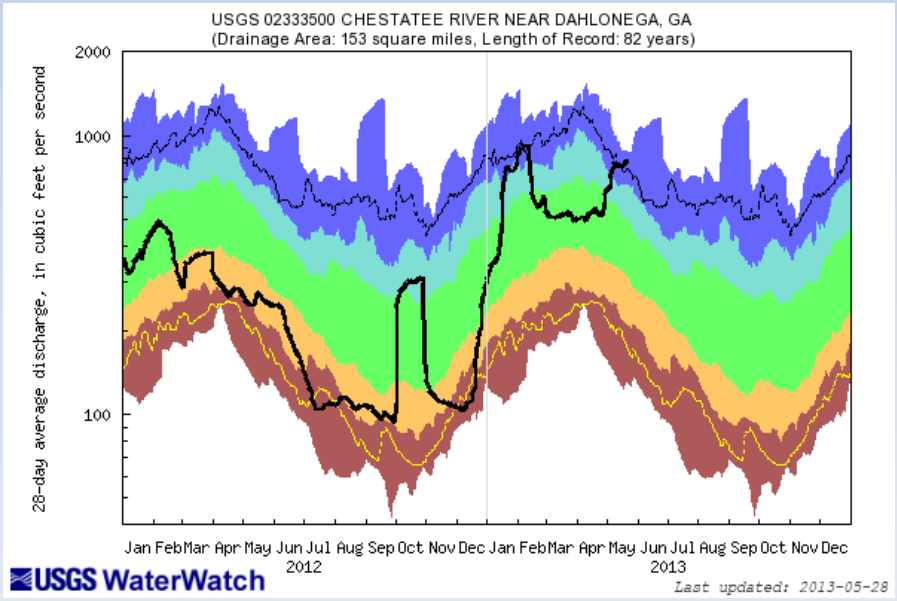
Lake Lanier Inflows

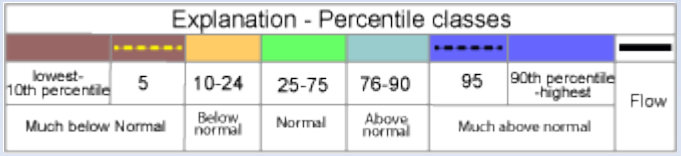
Chattahoochee near Cornelia (02331600)



http://waterwatch.usgs.gov

Chestatee near Dahlonega (02333500)



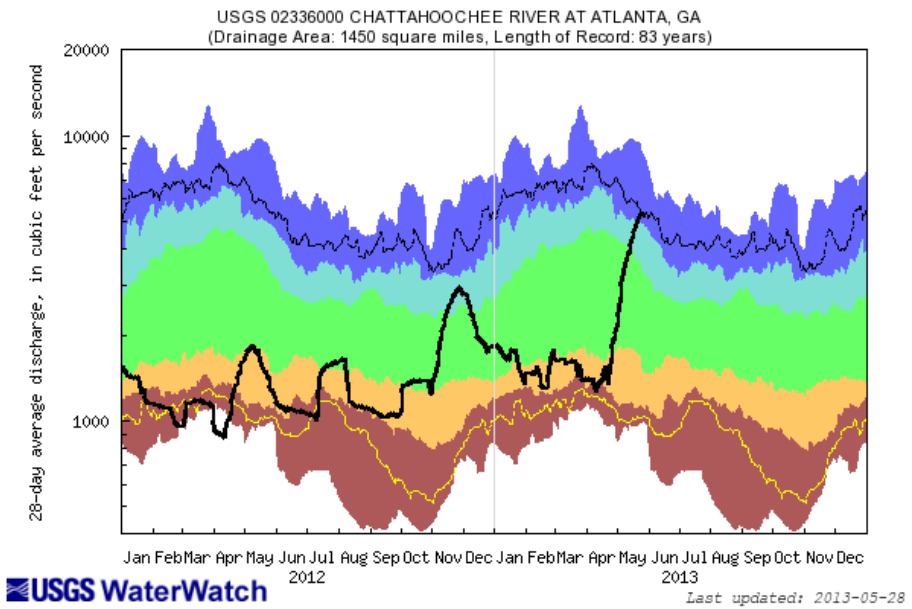


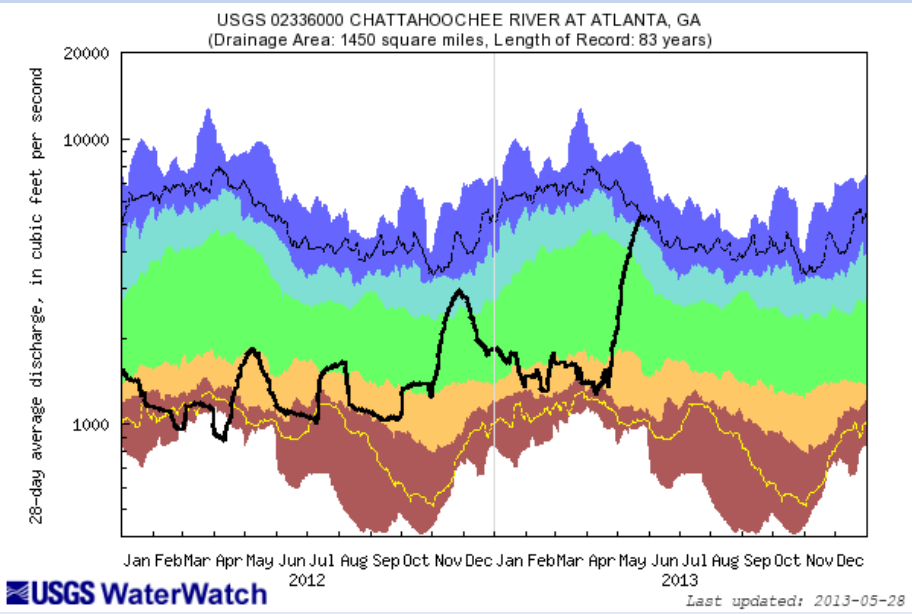
Current Streamflows

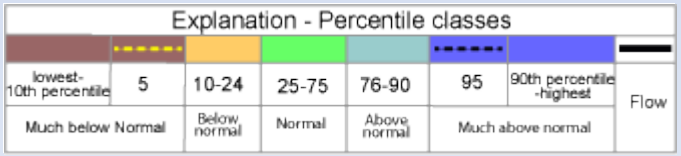
Chattahoochee at Atlanta (02336000)

http://waterwatch.usgs.gov

Chattahoochee near Whitesburg (02338000)

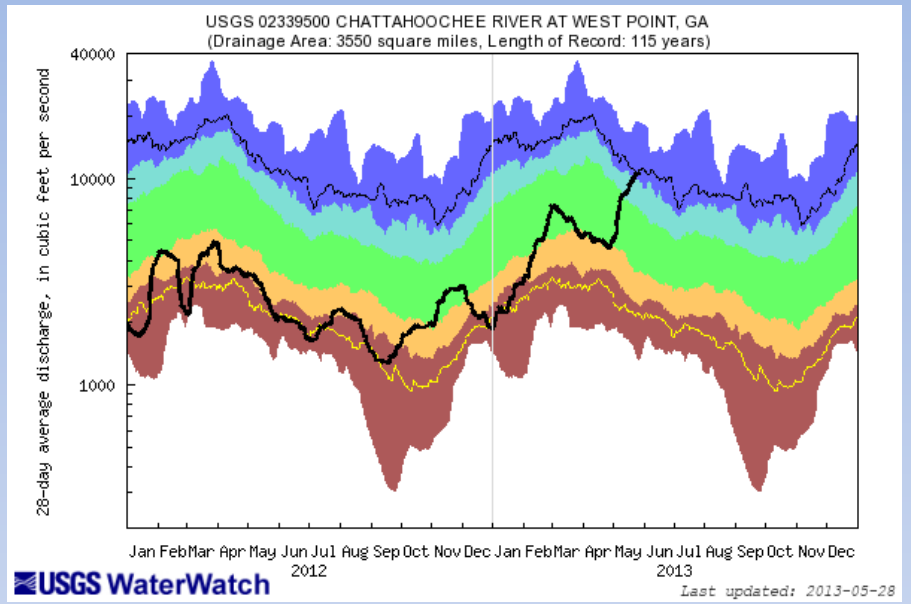






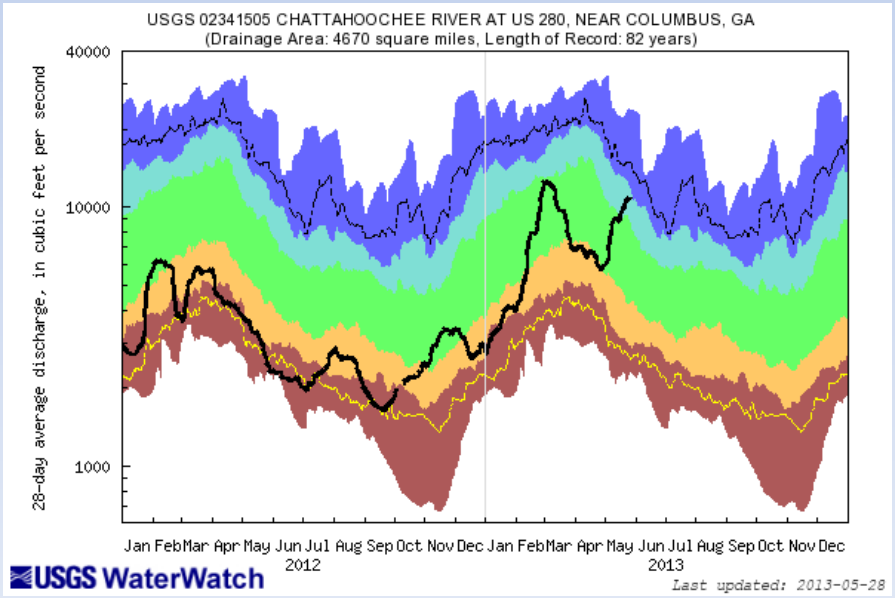
Current Streamflows

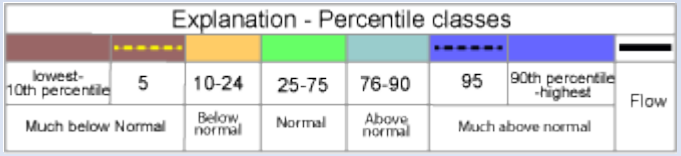
Chattahoochee at West Point (02339500)



http://waterwatch.usgs.gov

Chattahoochee near Columbus (02341505)



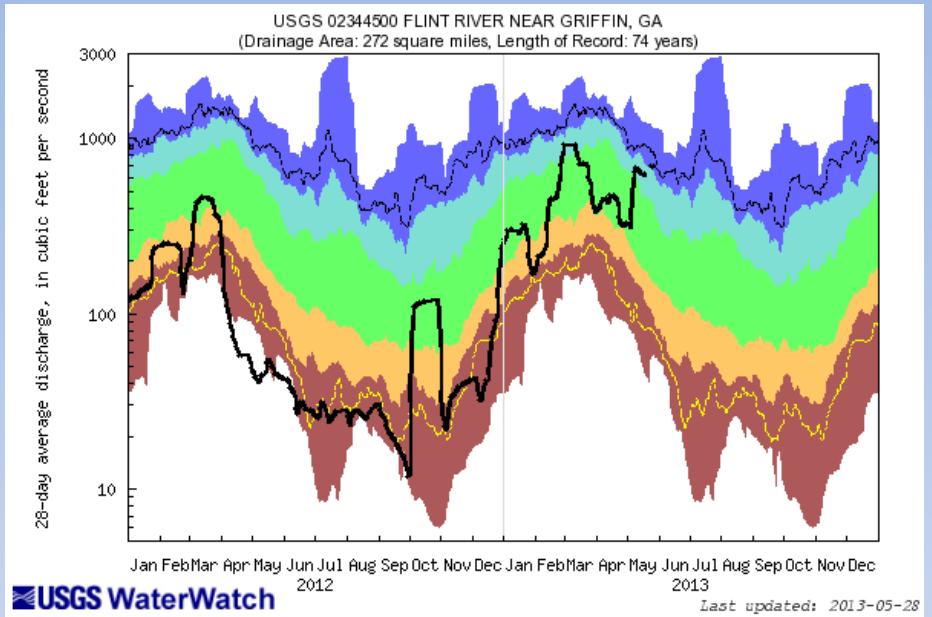


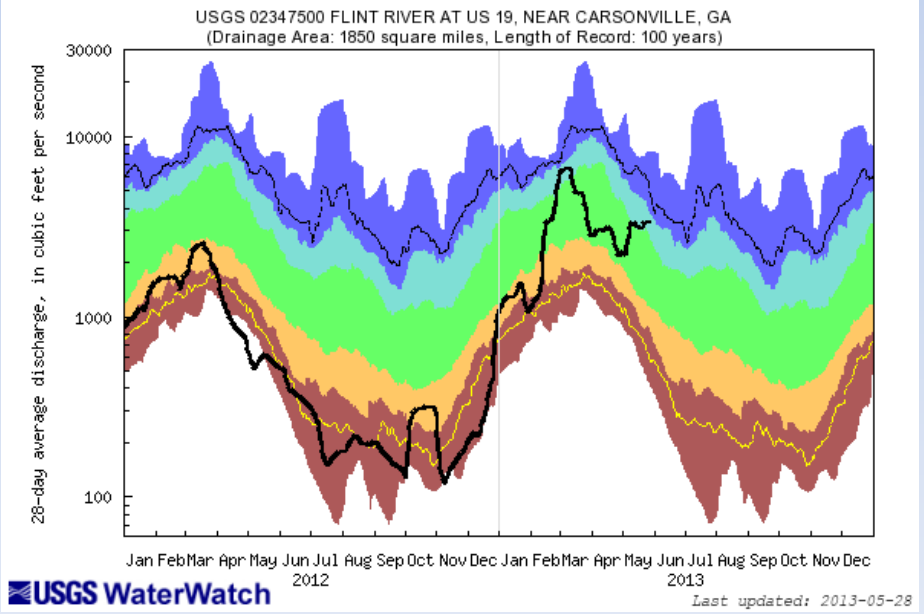
Current Streamflows

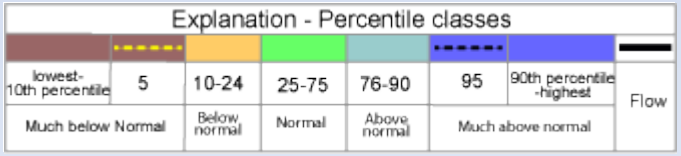
Flint River near Griffin (02344500)

http://waterwatch.usgs.gov

Flint River near Carsonville (02347500)



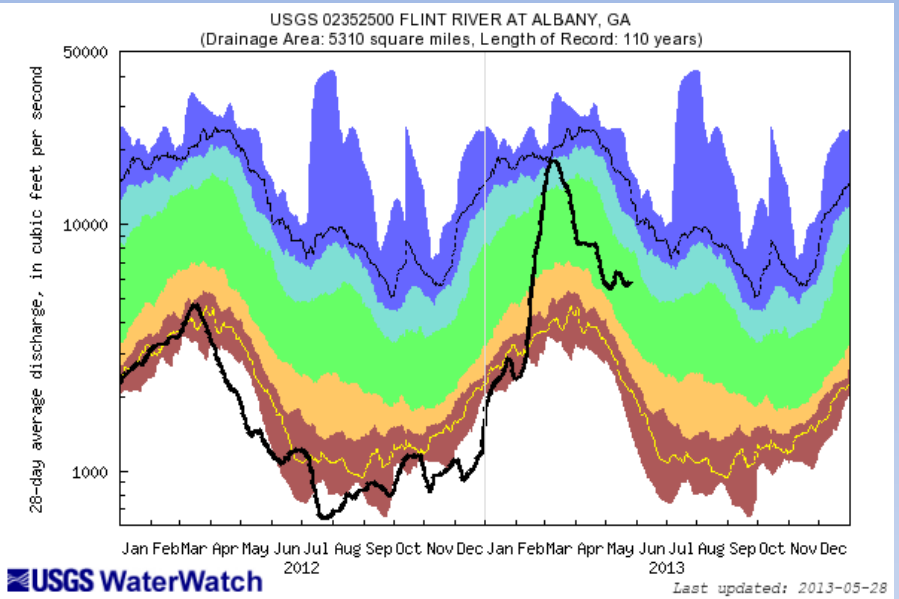




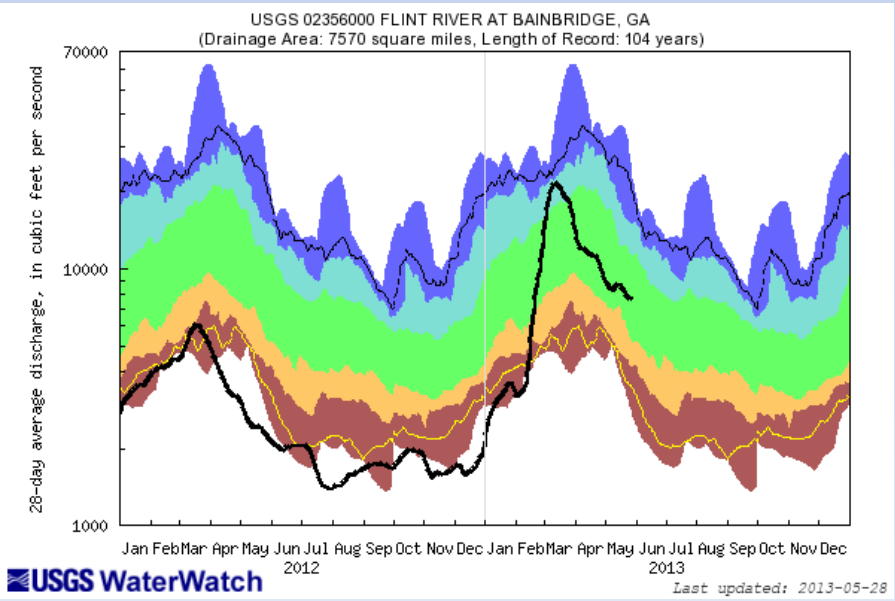
Current Streamflows

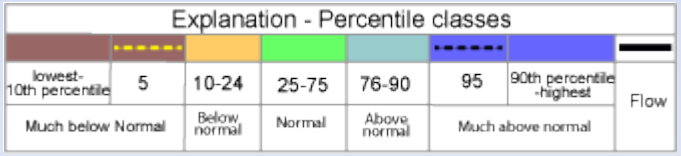
Flint River at Albany (02352500)

http://waterwatch.usgs.gov



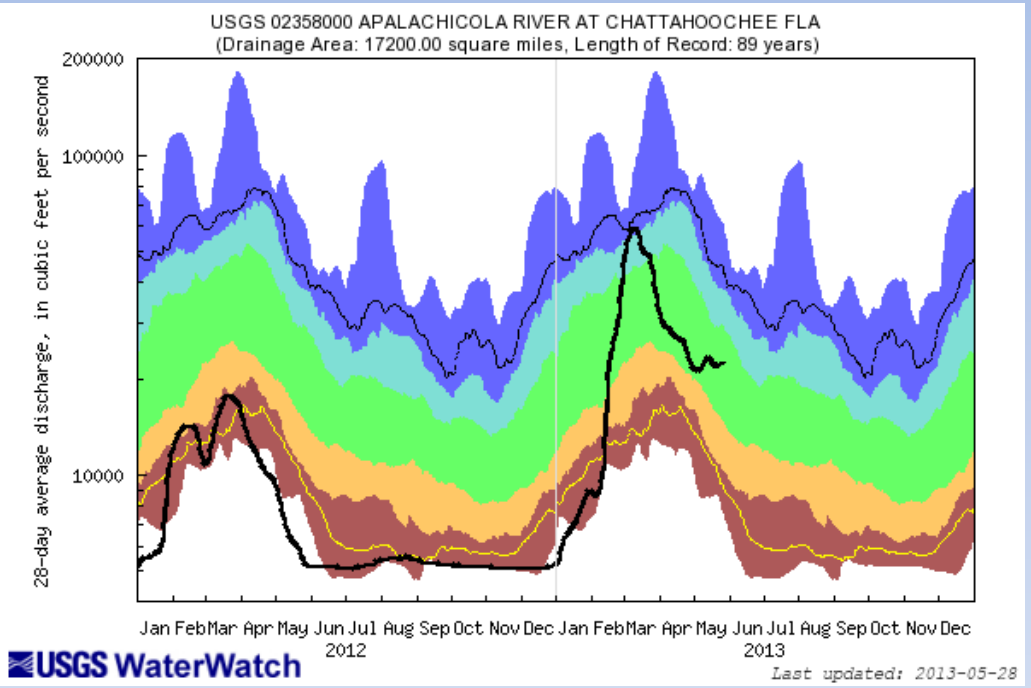
Flint at Bainbridge (02356000)

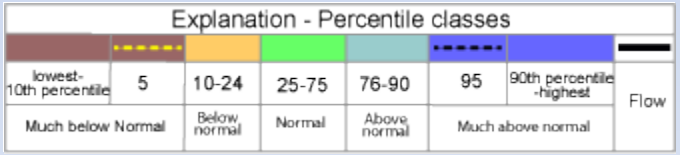




Streamflows

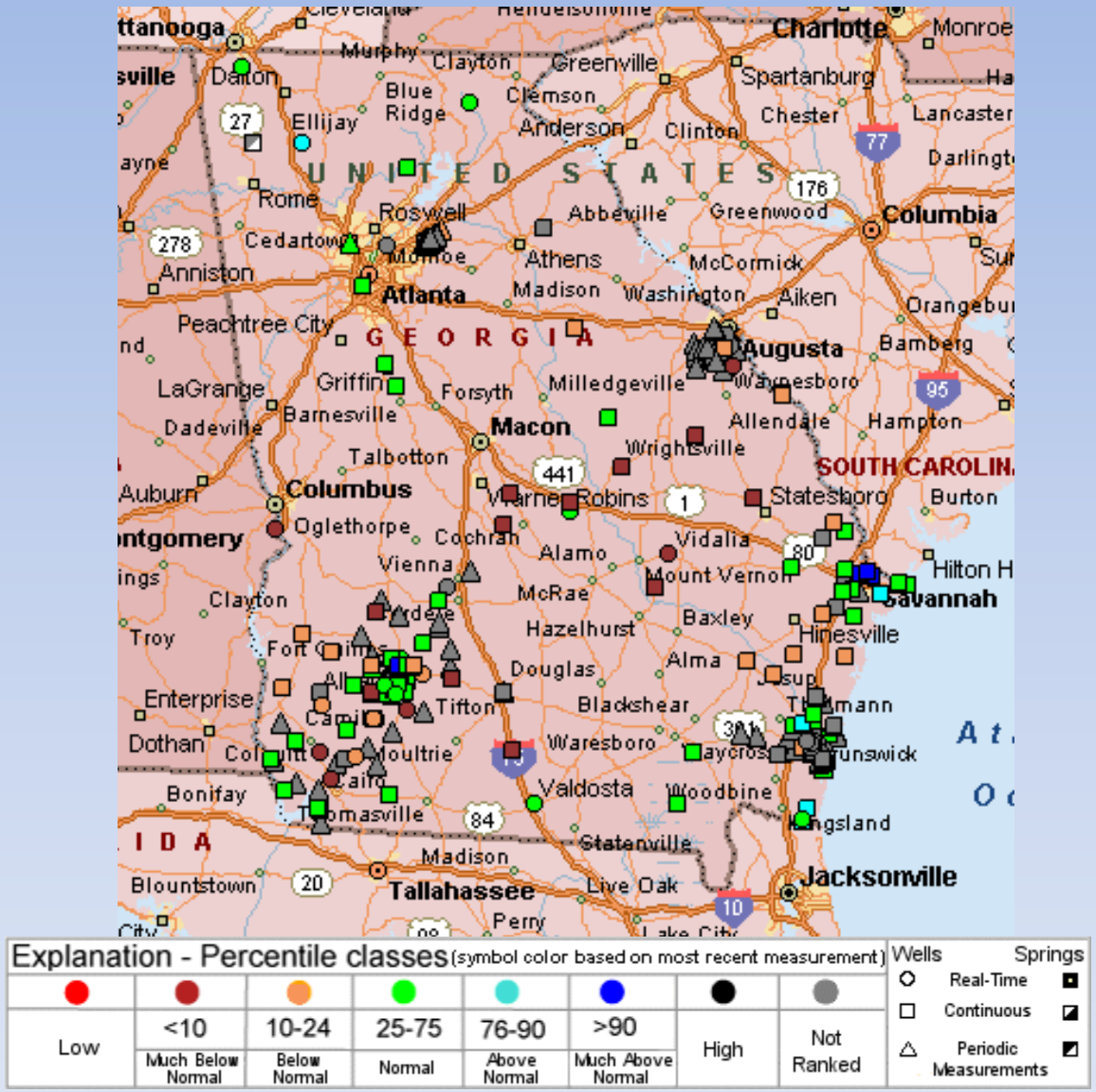
Apalachicola at Chattahoochee (02358000)





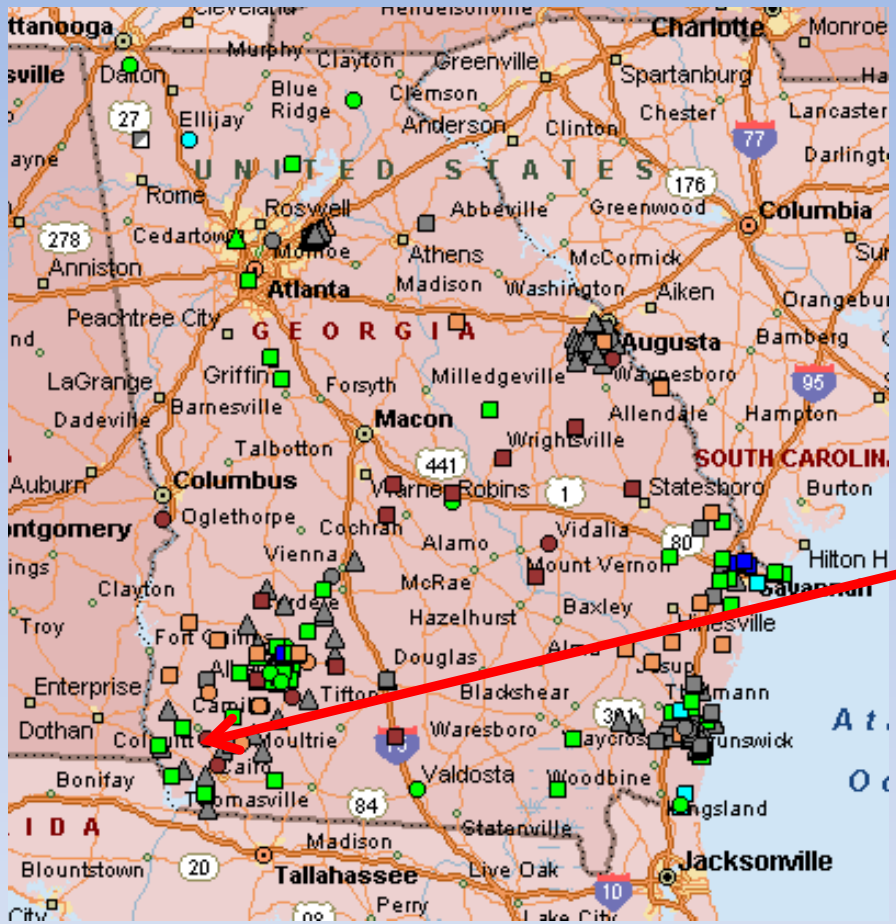
http://waterwatch.usgs.gov

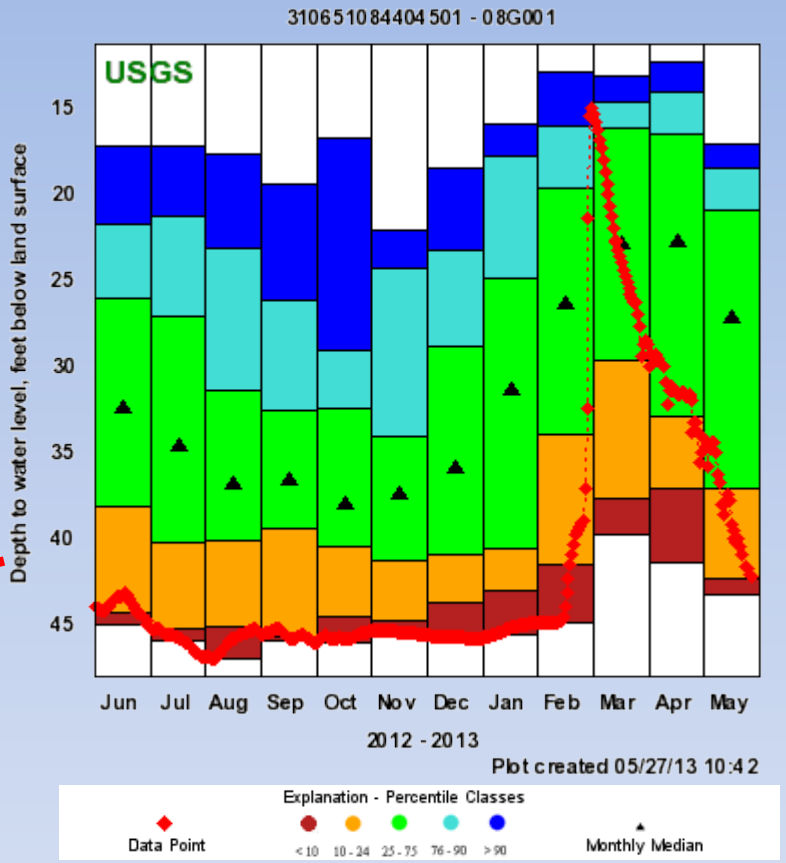
Groundwater Conditions



http://groundwaterwatch.usgs.gov

Groundwater Status



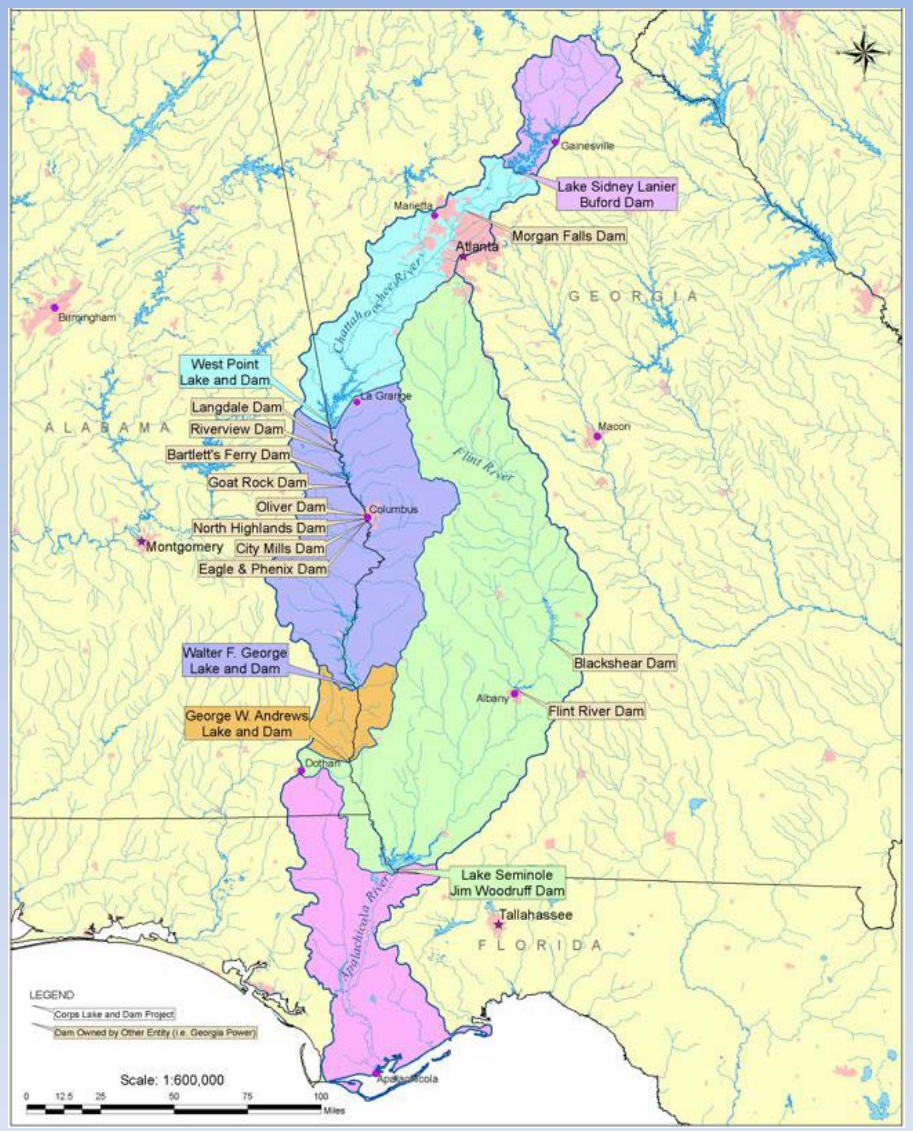


Miller County, GA
(Upper Floridan Aquifer)

Explanation - Percentile classes (symbol color based on most recent measurement)							
Low	<10 Much Below Normal	10-24 Below Normal	25-75 Normal	76-90 Above Normal	>90 Much Above Normal	High	Not Ranked

Wells	Springs
Real-Time	
Continuous	
Periodic Measurements	

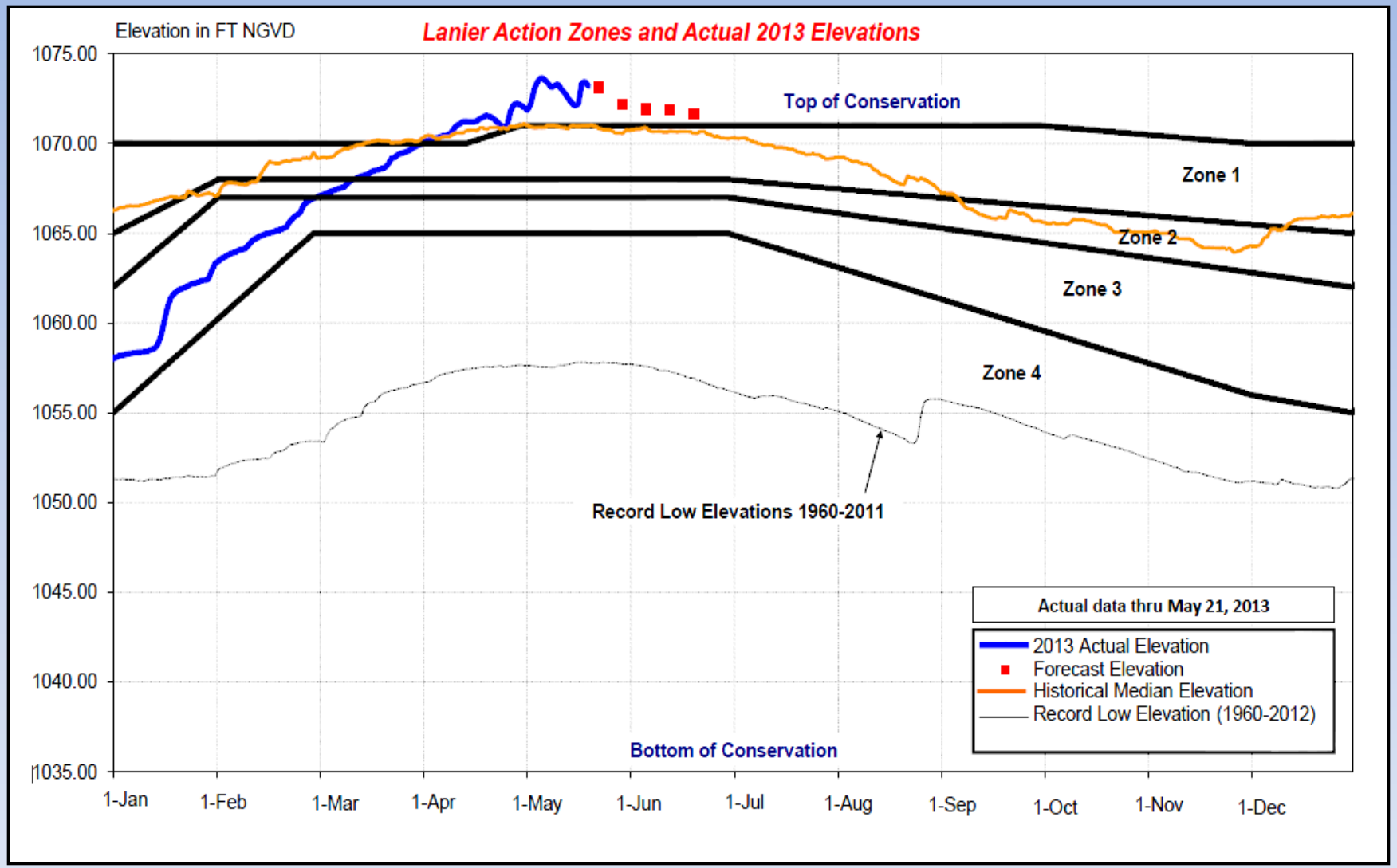
USACE – ACF Operations



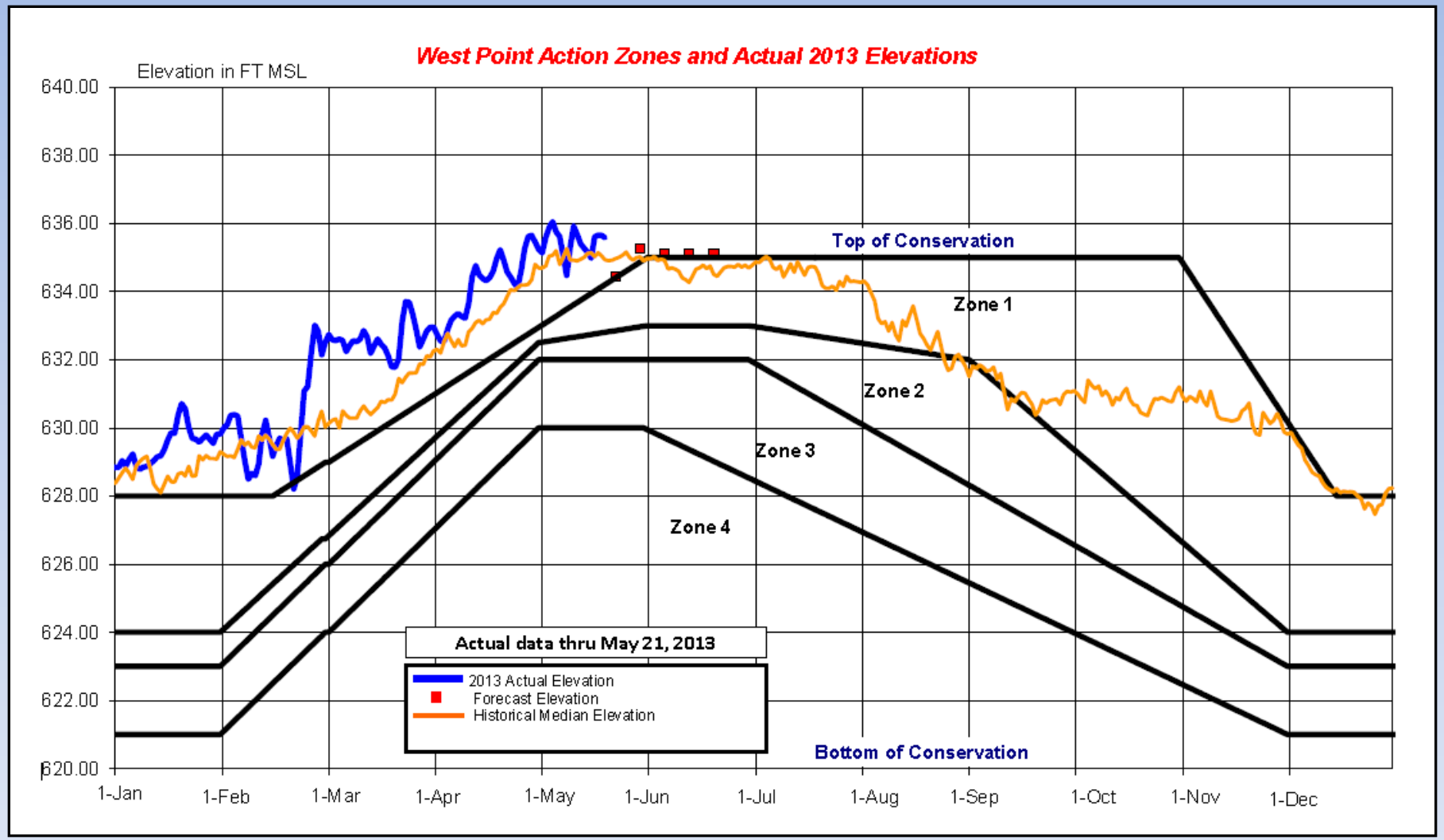
HYDROLOGY & HYDRAULICS
MOBILE DISTRICT

NIDIS
NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM

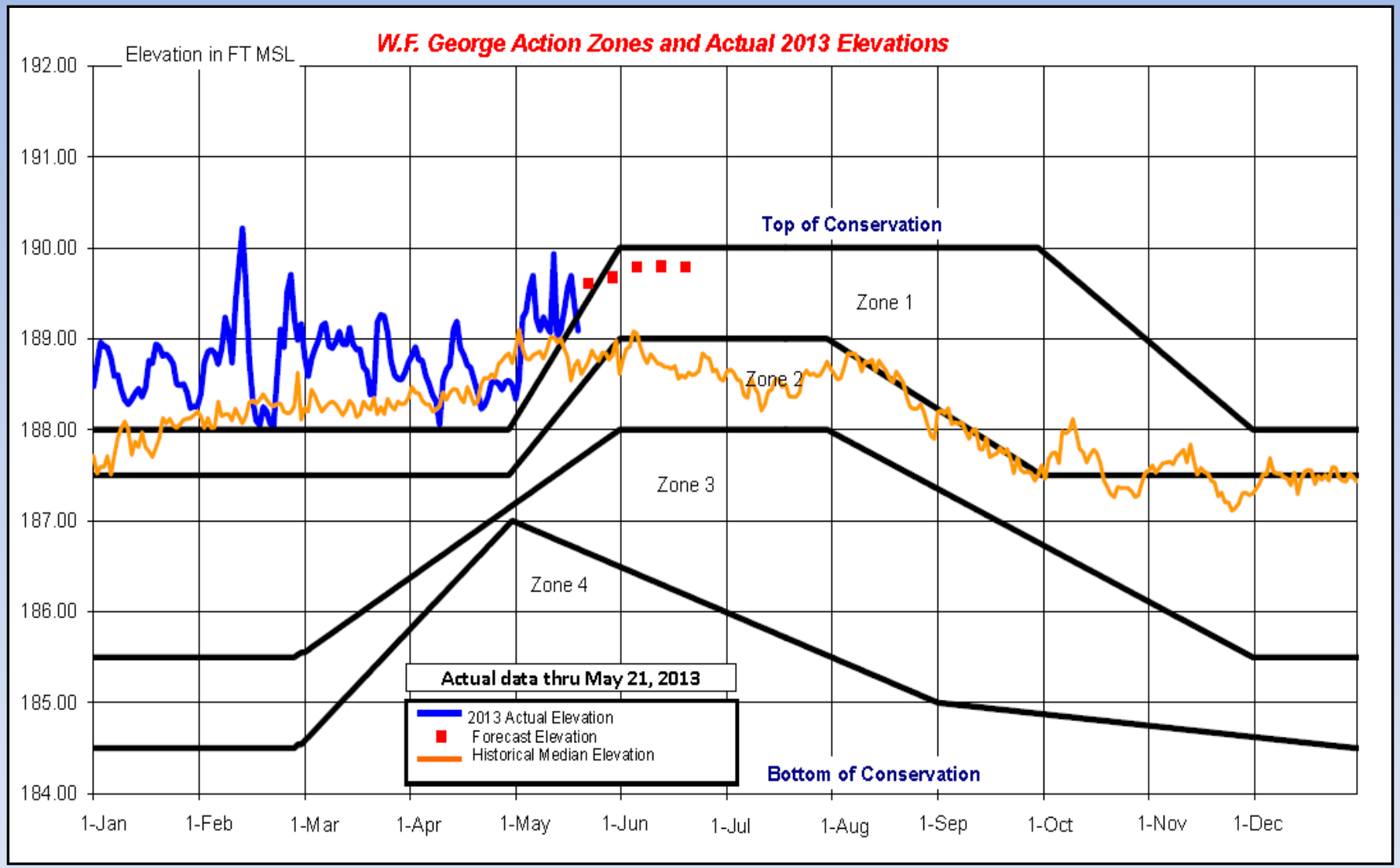
Lake Lanier


Elevation in FT NGVD
Lanier Action Zones and Actual 2013 Elevations
1075.00
1070.00
1065.00
1060.00
1055.00
1050.00
1045.00
1040.00
1035.00
Top of Conservation
Zone 1
Zone 2
Zone 3
Zone 4
Record Low Elevations 1960-2011
Bottom of Conservation
Actual data thru May 21, 2013
2013 Actual Elevation
Forecast Elevation
Historical Median Elevation
Record Low Elevation (1960-2012)
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec

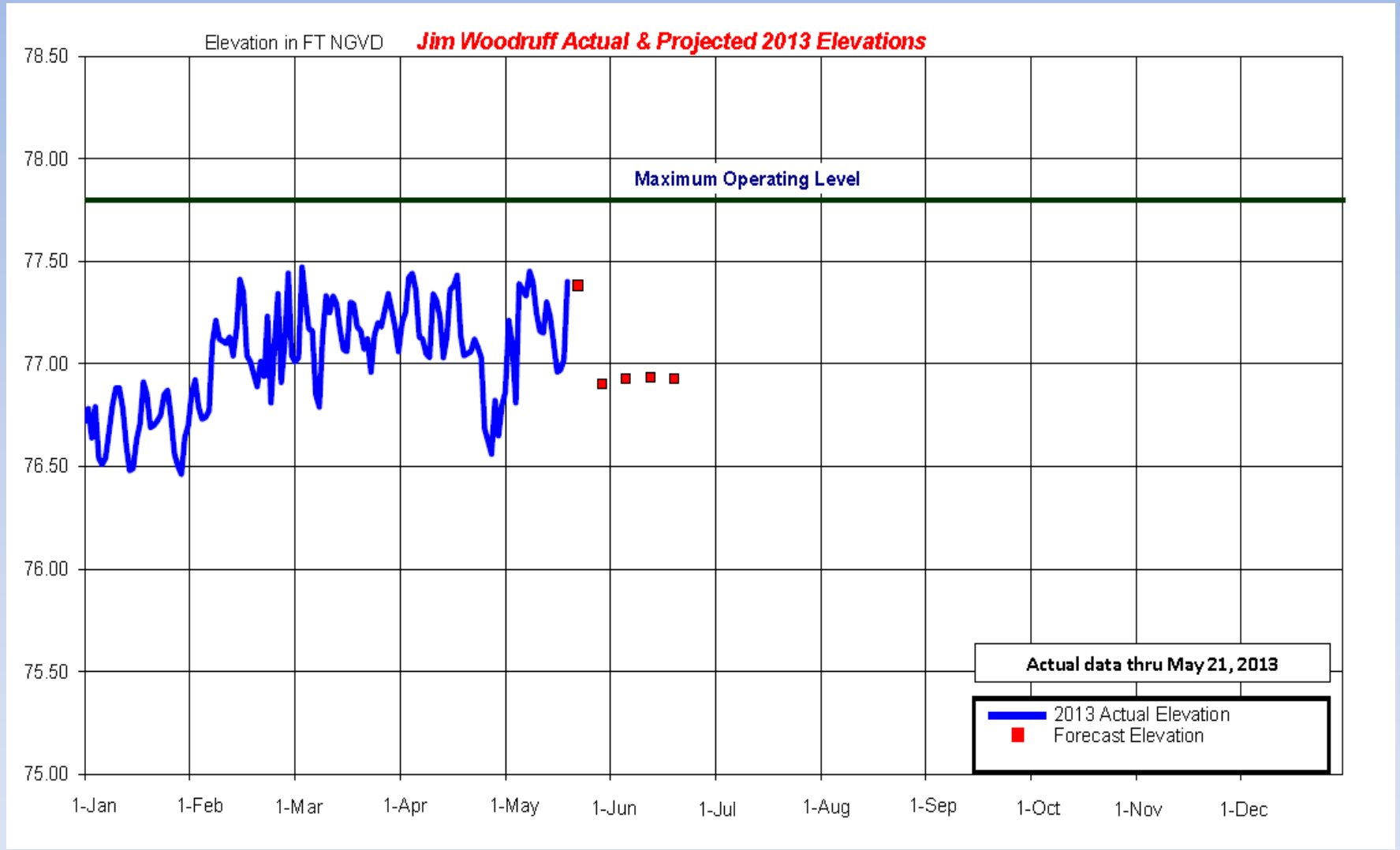
West Point


West Point Action Zones and Actual 2013 Elevations
Elevation in FT MSL
640.00
638.00
636.00
634.00
632.00
630.00
628.00
626.00
624.00
622.00
620.00
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Top of Conservation
Zone 1
Zone 2
Zone 3
Zone 4
Bottom of Conservation
Actual data thru May 21, 2013
2013 Actual Elevation
Forecast Elevation
Historical Median Elevation

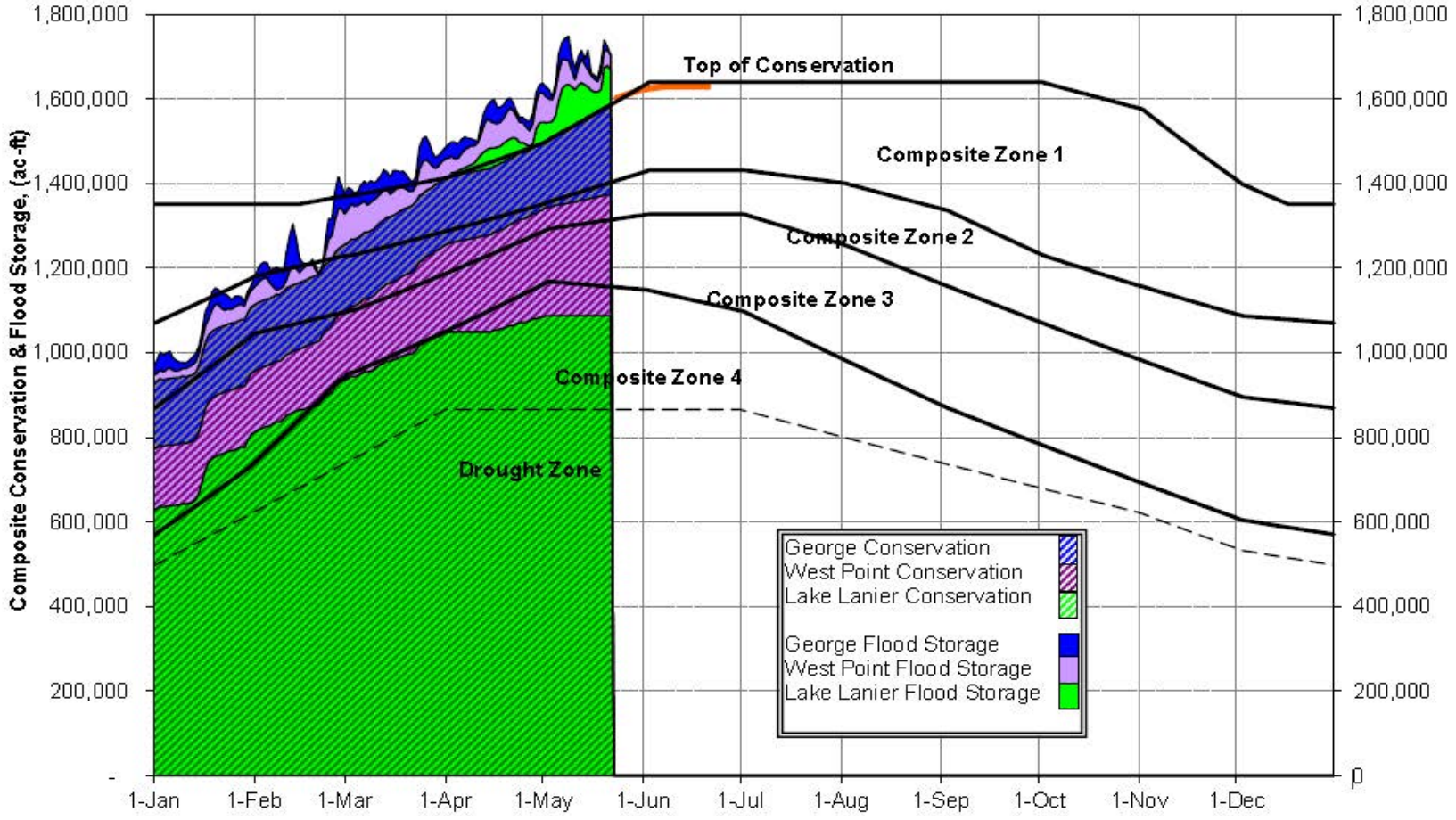
W.F. George


W.F. George Action Zones and Actual 2013 Elevations
Elevation in FT MSL
192.00
191.00
190.00
189.00
188.00
187.00
186.00
185.00
184.00
Top of Conservation
Zone 1
Zone 2
Zone 3
Zone 4
Bottom of Conservation
Actual data thru May 21, 2013
2013 Actual Elevation
Forecast Elevation
Historical Median Elevation
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec

Woodruff


Elevation in FT NGVD
Jim Woodruff Actual & Projected 2013 Elevations
78.50
78.00
77.50
77.00
76.50
76.00
75.50
75.00
Maximum Operating Level
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Actual data thru May 21, 2013
2013 Actual Elevation
Forecast Elevation

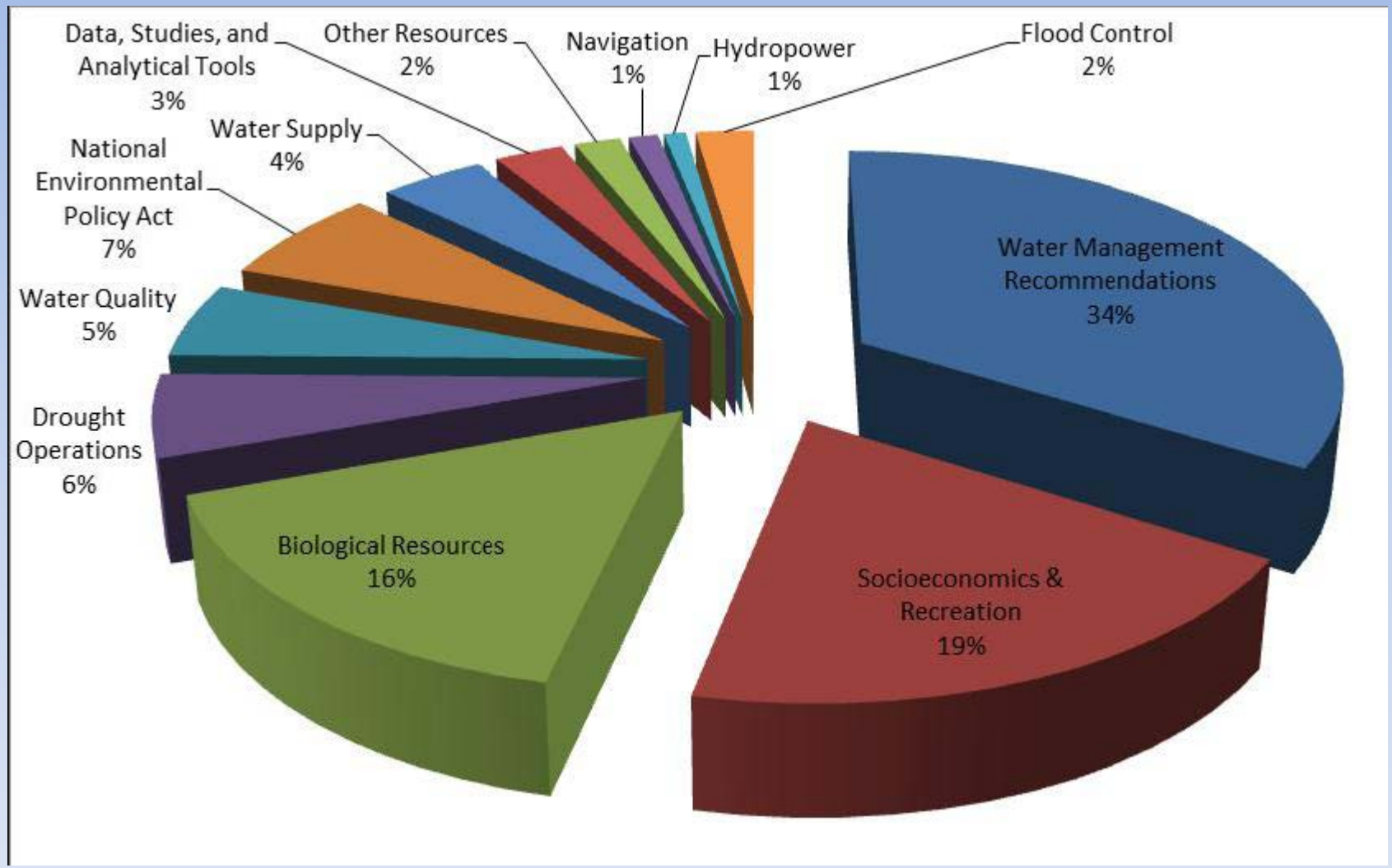
2013 ACF Basin Composite Conservation Storage



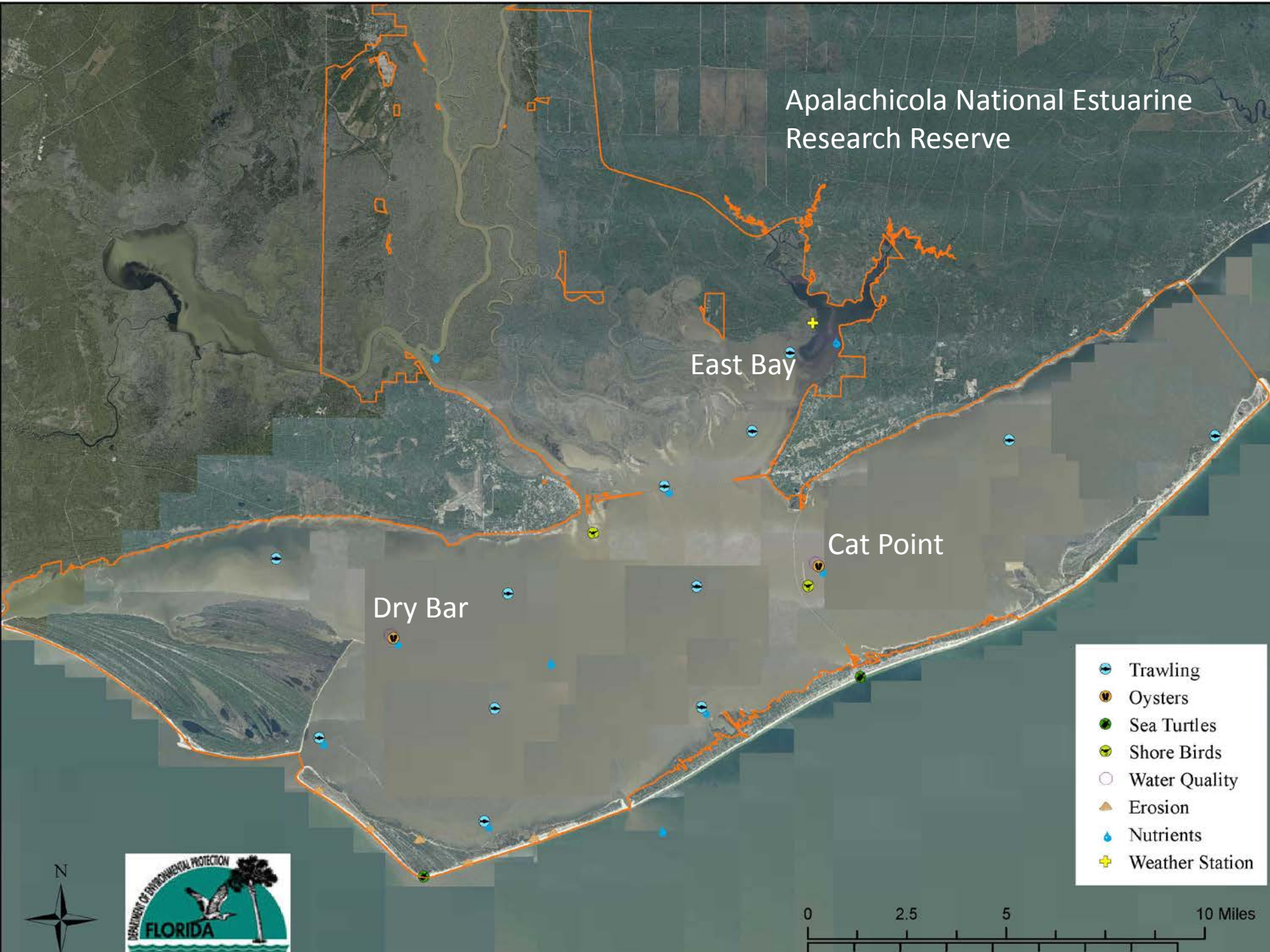
Local Inflows into Lakes by Month

2013	BUFORD LOCALS			WEST POINT LOCALS			GEORGE LOCALS			WOODRUFF LOCALS			ACF TOTAL		
	HISTORICAL AVG (CFS)	2013 AVG (CFS)	% NORMAL	HISTORICA AVG (CFS)	2013 AVG (CFS)	% NORMAL	HISTORICAL AVG (CFS)	2013 AVG (CFS)	% NORMAL	HISTORICAL AVG (CFS)	2013 AVG (CFS)	% NORMAL	HISTORICAL (CFS)	2013 (CFS)	%
JAN	2556	3469	136%	4059	2549	63%	5846	1879	32%	14887	3816	26%	27347	11712	43%
FEB	2837	2855	101%	4957	6959	140%	7407	17397	235%	18838	19588	104%	34039	46799	137%
MAR	3249	2387	73%	5865	3894	66%	9578	6505	68%	21180	23635	112%	39873	36421	91%
APR	2699	2835	105%	4289	3843	90%	6312	4560	72%	17241	12842	74%	30541	24080	79%
MAY	2067	4981	241%	3048	5830	191%	3070	2781	91%	11544	10636	92%	19728	24228	123%
JUN	1571		0%	2143		0%	2206		0%	9235		0%	15155	0	0%
JUL	1338		0%	2109		0%	2709		0%	9597		0%	15753	0	0%
AUG	1186		0%	1342		0%	1711		0%	7748		0%	11987	0	0%
SEP	1084		0%	1369		0%	1333		0%	6376		0%	10163	0	0%
OCT	1194		0%	1505		0%	1726		0%	6650		0%	11075	0	0%
NOV	1478		0%	2363		0%	2538		0%	6882		0%	13260	0	0%
DEC	2003		0%	2874		0%	3969		0%	10065		0%	18911	0	0%
YTD	2065	3305	160%	3242	4615	142%	4034	6624	164%	11687	14103	121%	20653	11937	58%

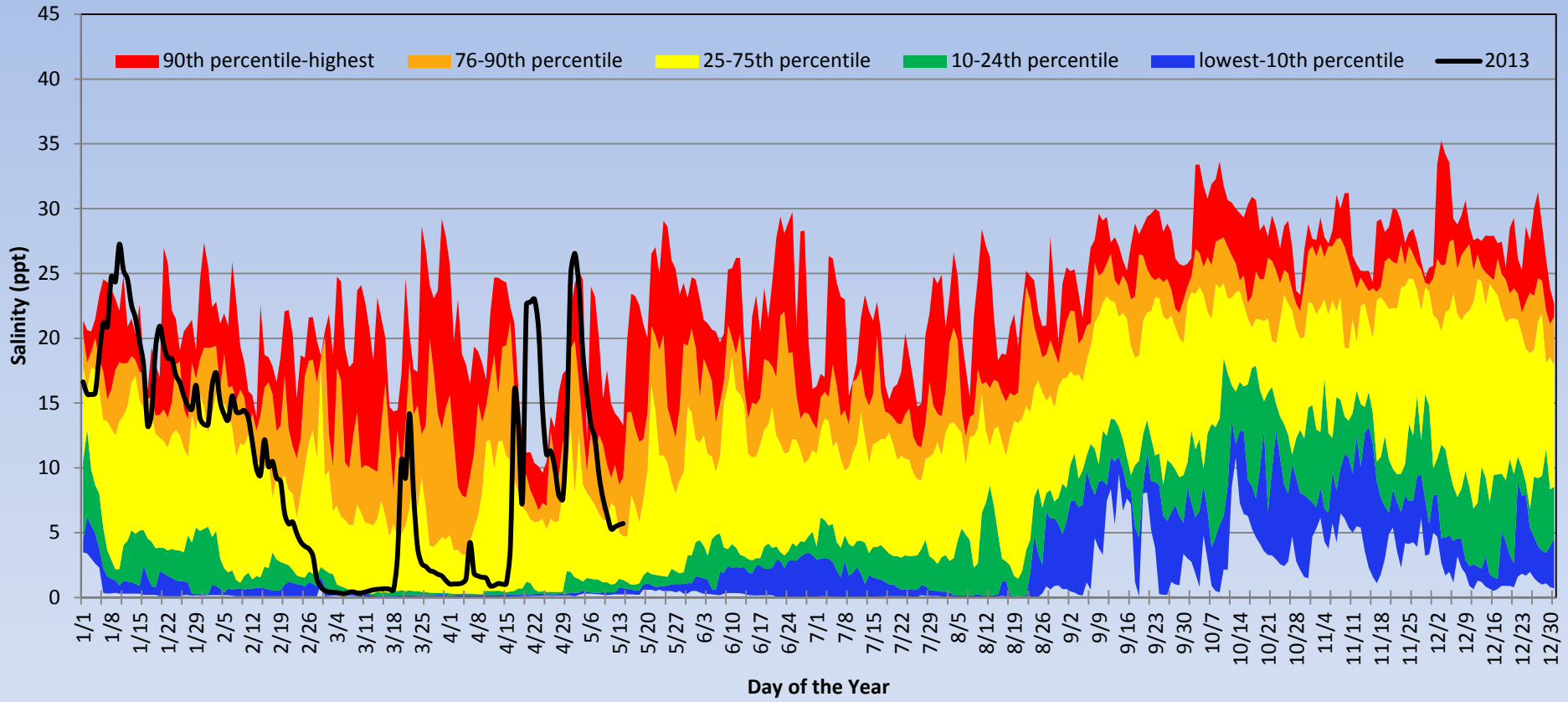
ACE Scoping Report for the ACF Basin



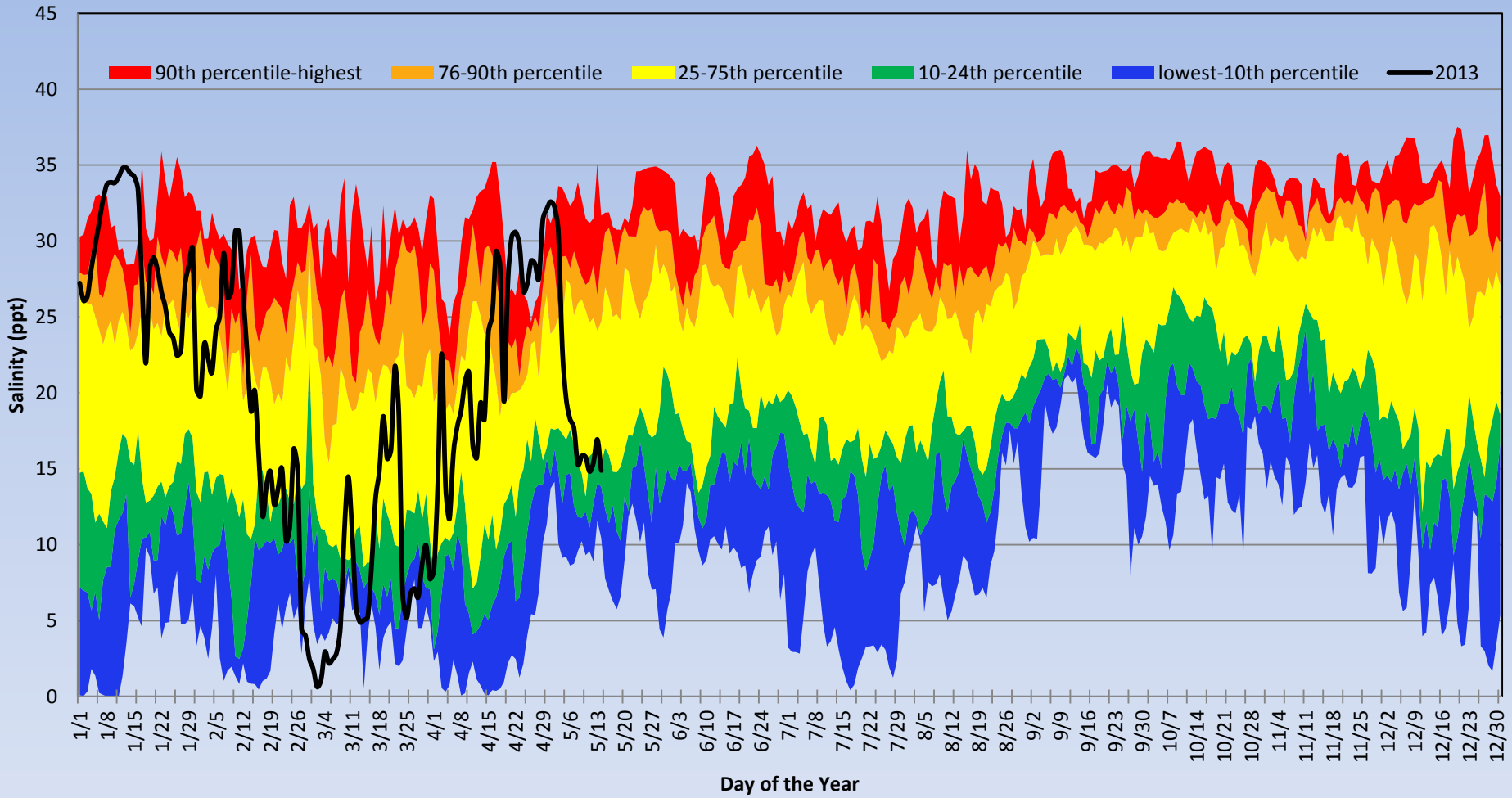
Distribution of comments by major category


Apalachicola National Estuarine Research Reserve
East Bay
Cat Point
Dry Bar
Trawling
Oysters
Sea Turtles
Shore Birds
Water Quality
Erosion
Nutrients
Weather Station
N
DEPARTMENT OF ENVIRONMENTAL PROTECTION
FLORIDA
0
2.5
5
10 Miles

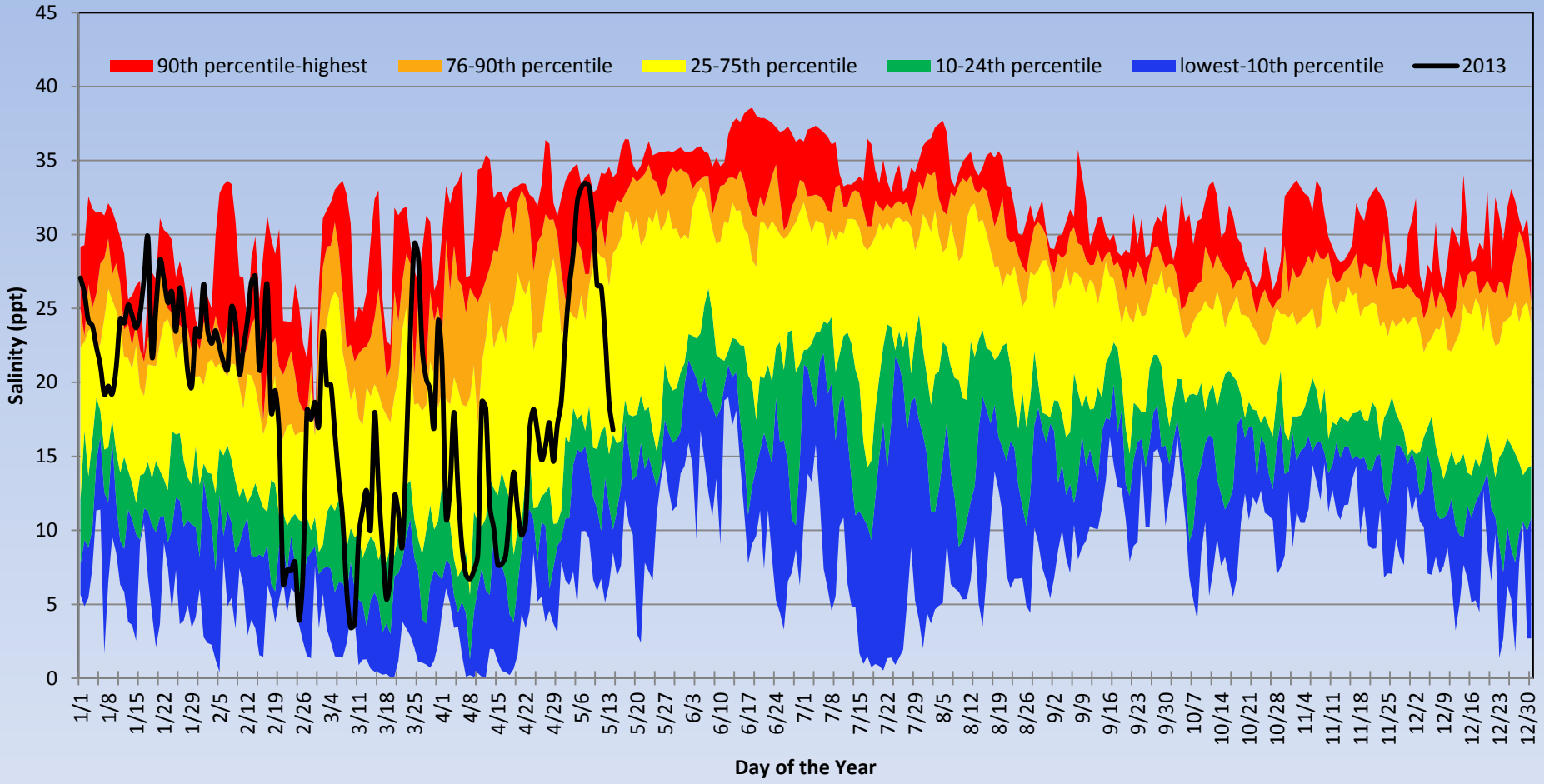
Daily Average Salinity at East Bay Bottom



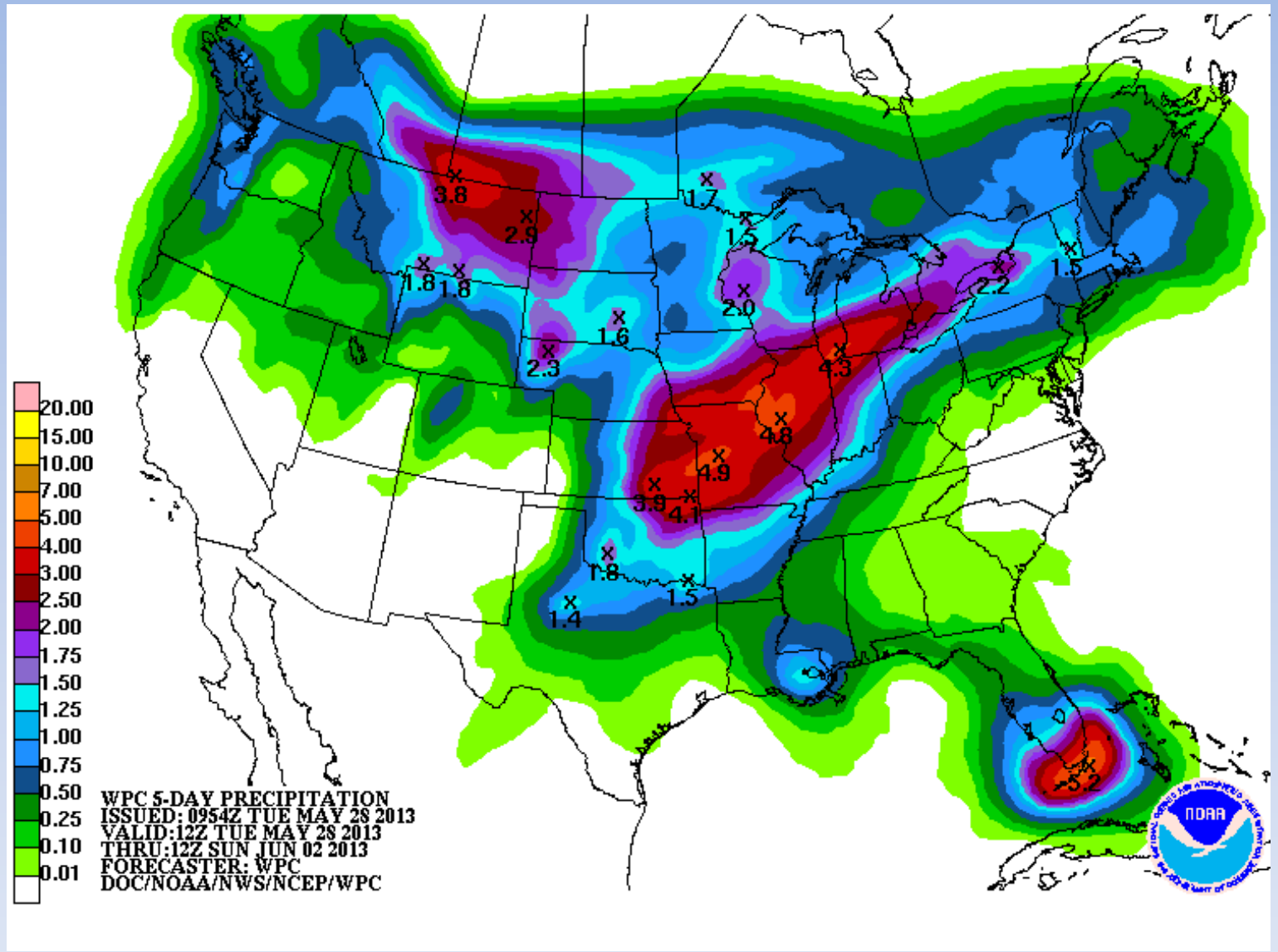
Daily Average Salinity at Cat Point



Daily Average Salinity at Dry Bar

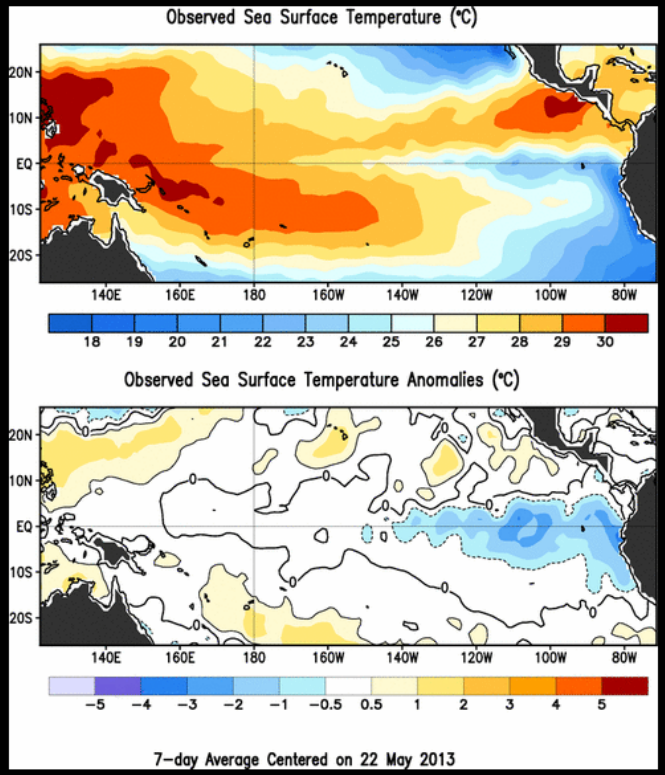


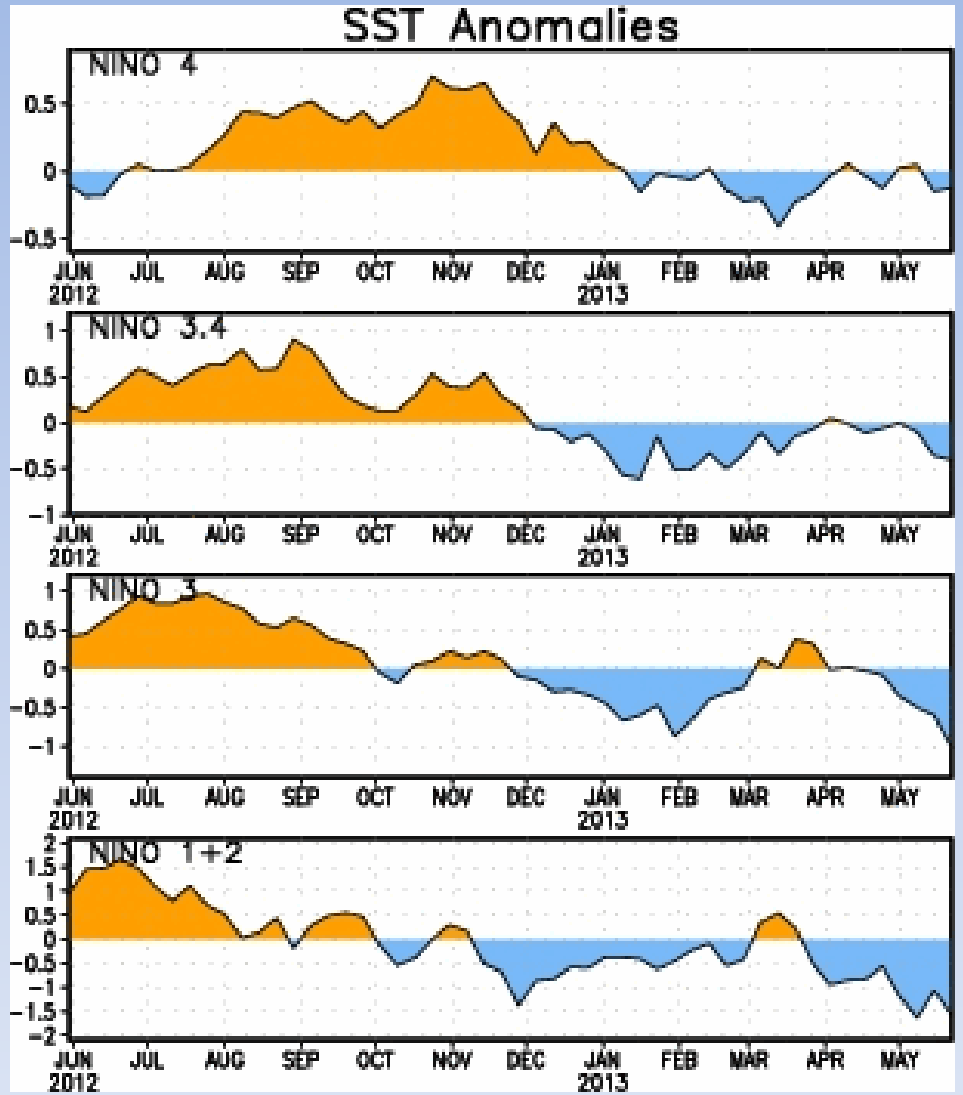
5-Day Precipitation Forecast



http://www.hpc.ncep.noaa.gov/qpf/day1-5.shtml

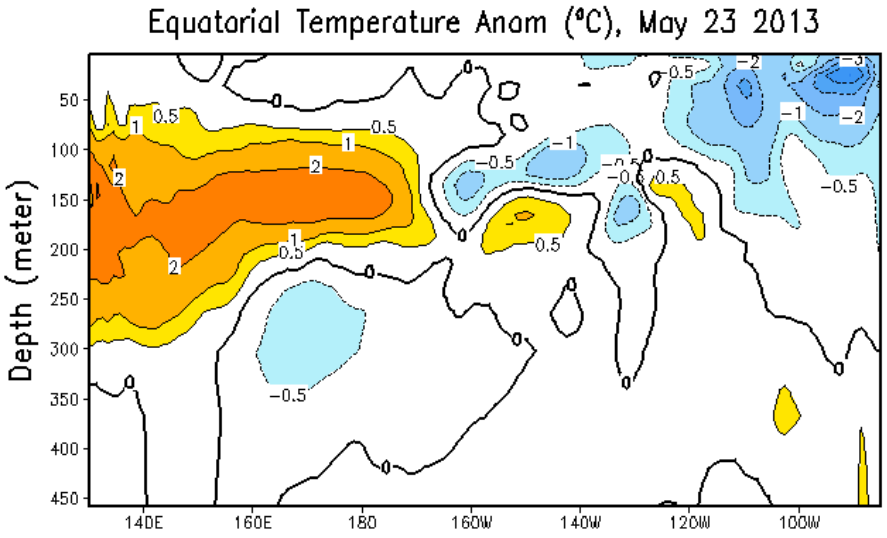
7-day average Pacific Ocean SST Anomalies

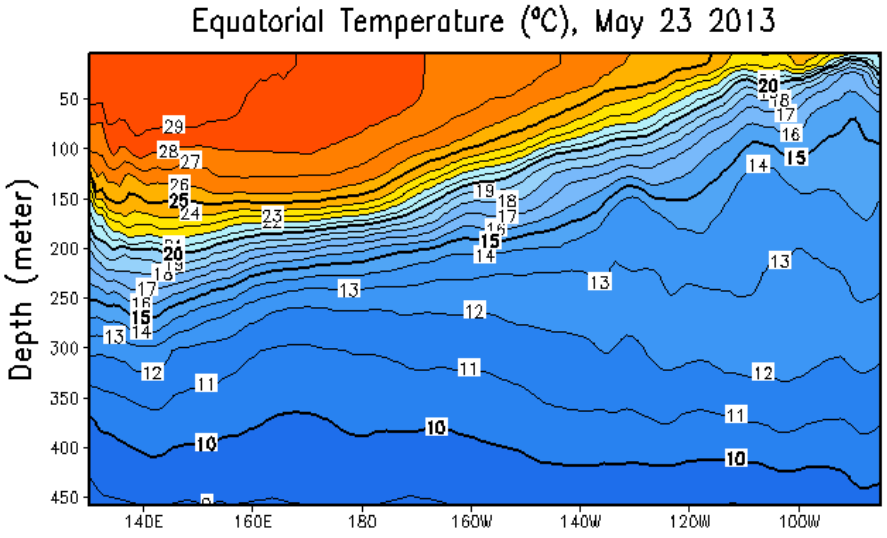




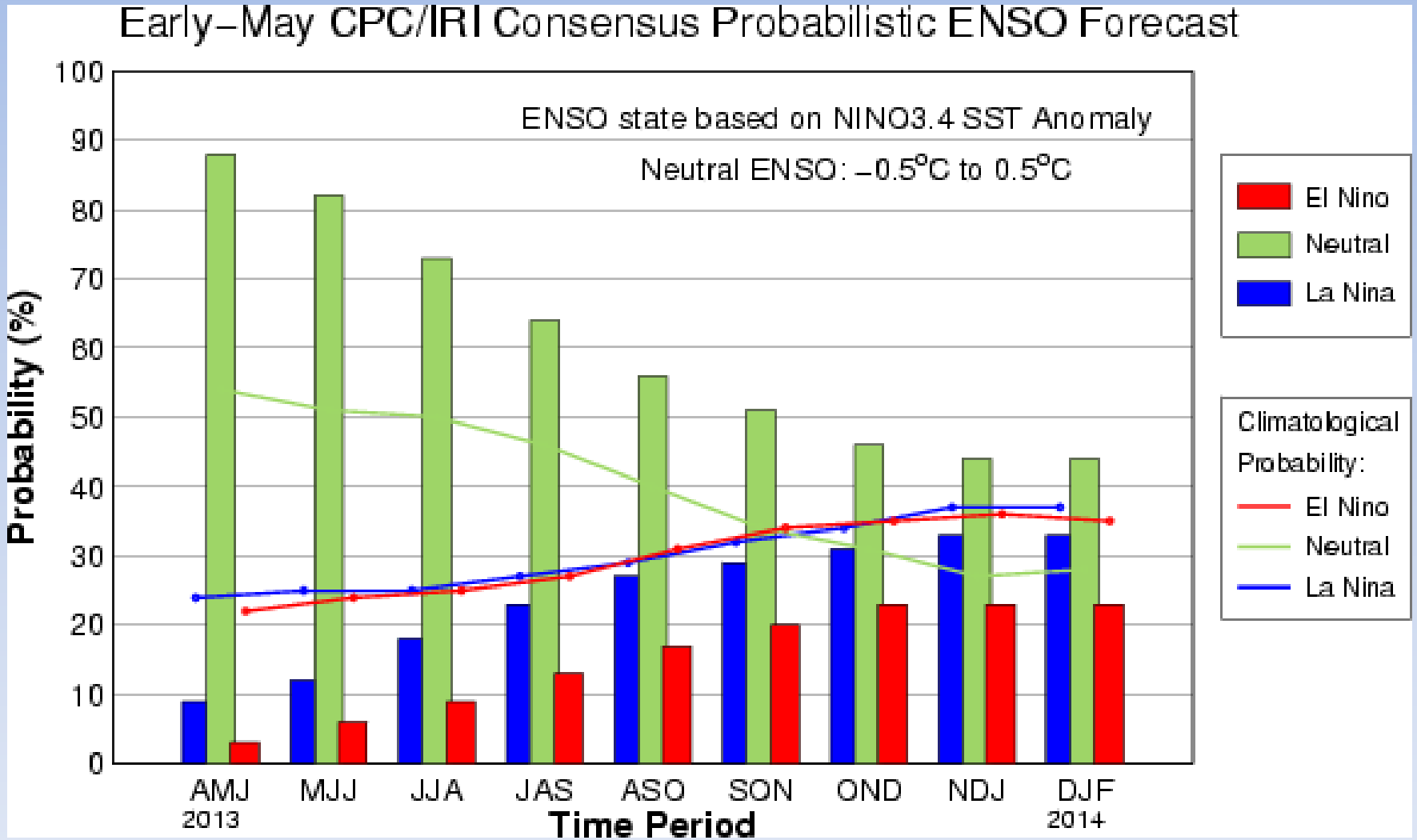
http://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/enso.shtml

Subsurface Temperatures

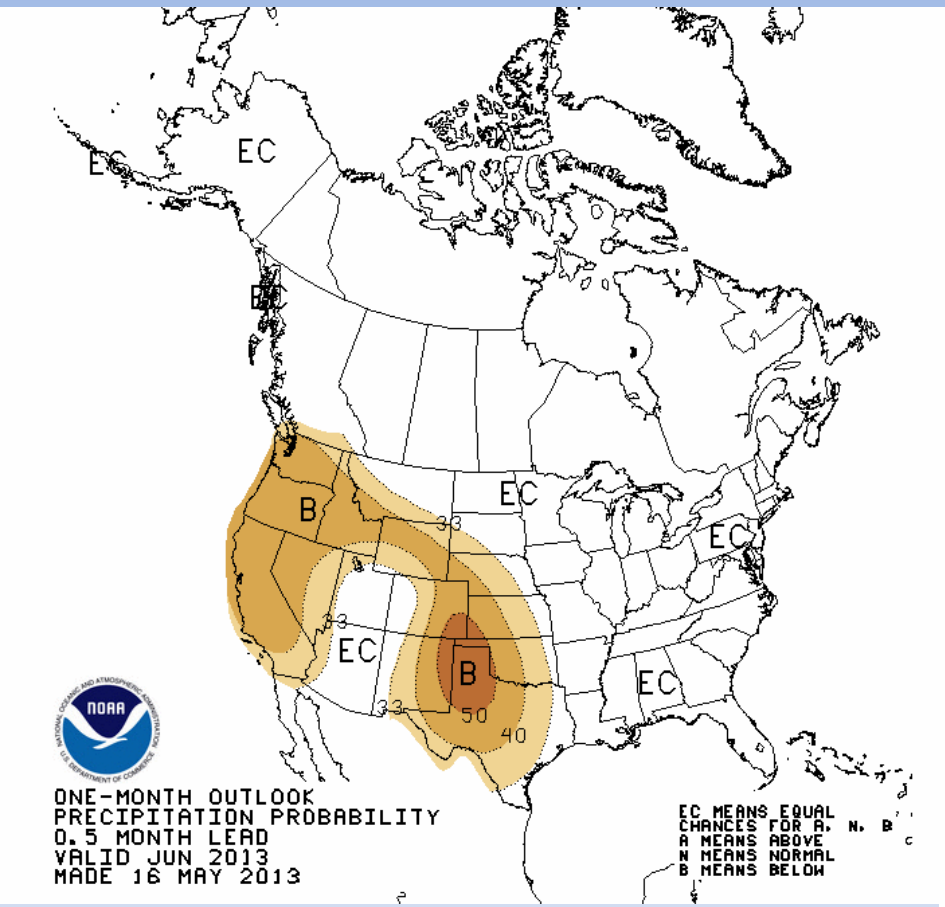




ENSO forecast from IRI

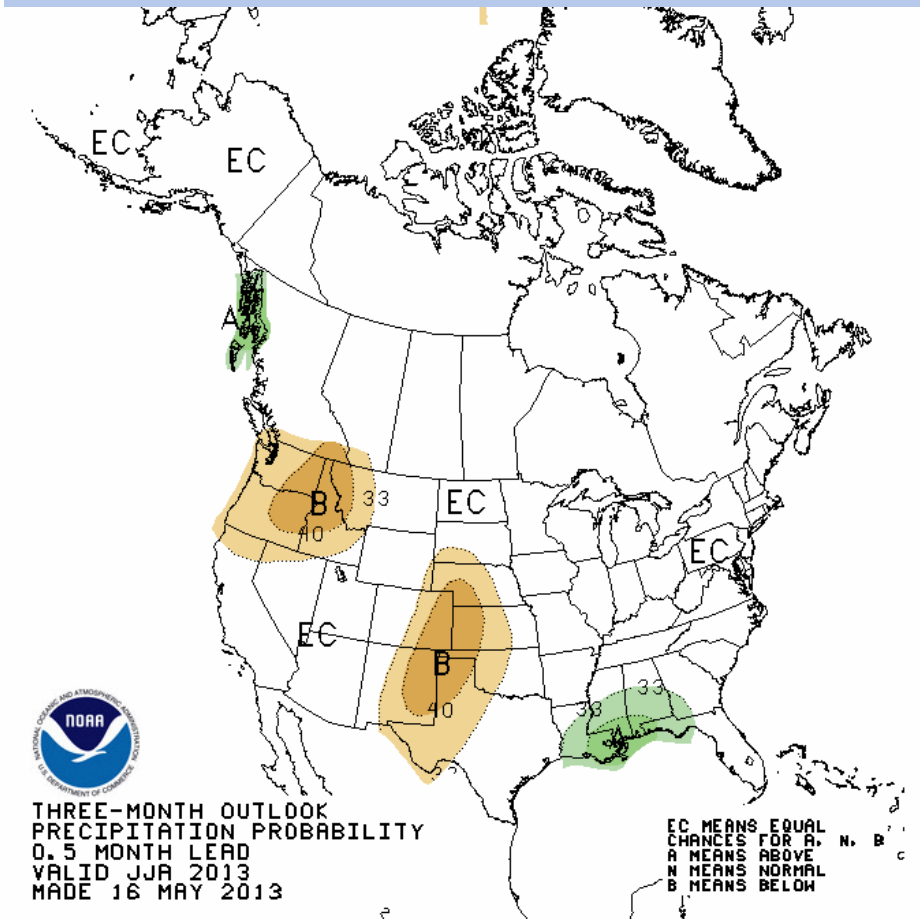


1-3 Month Precipitation Outlook

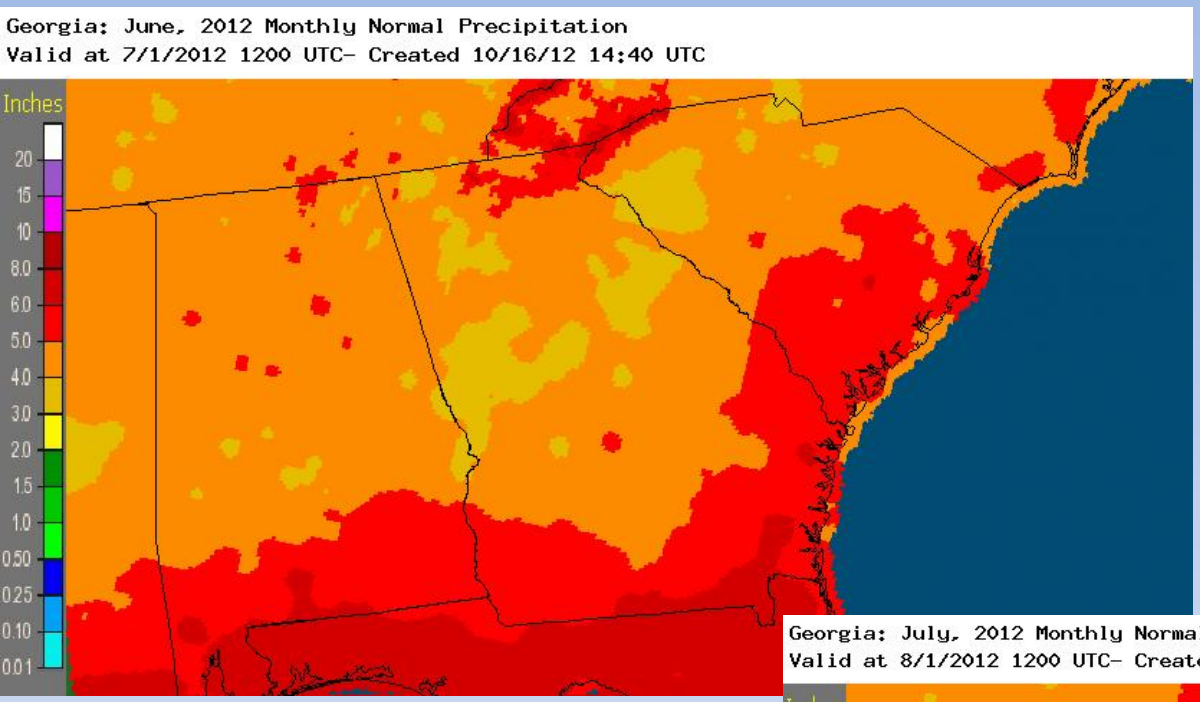


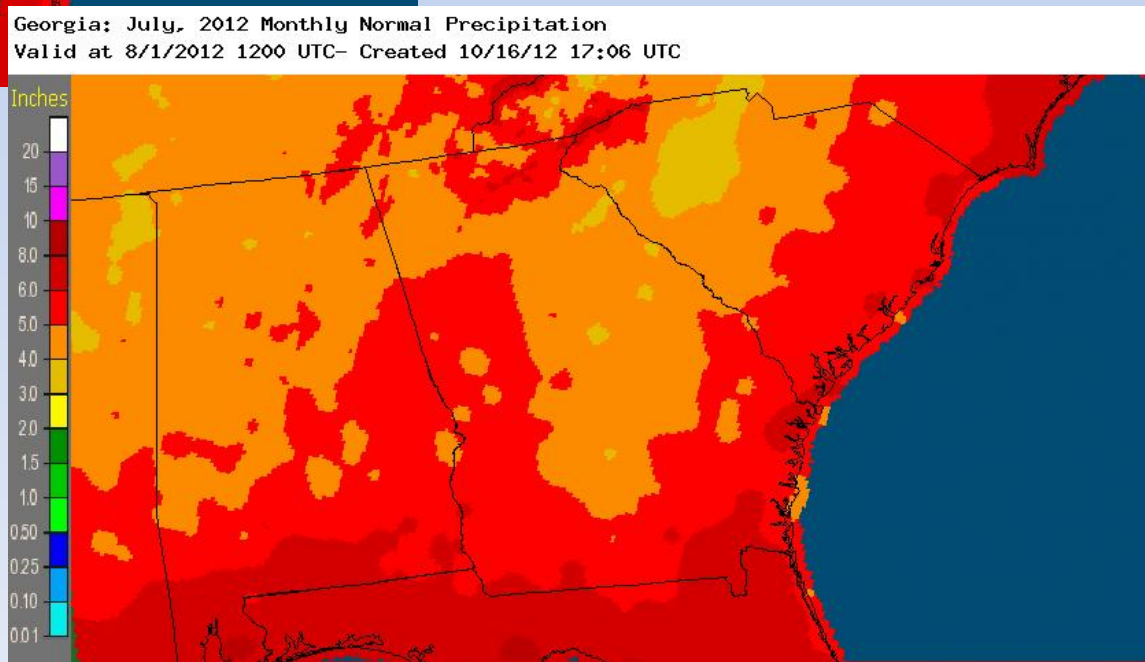
1 Month

3 Month



Summer Rainfall Climatology



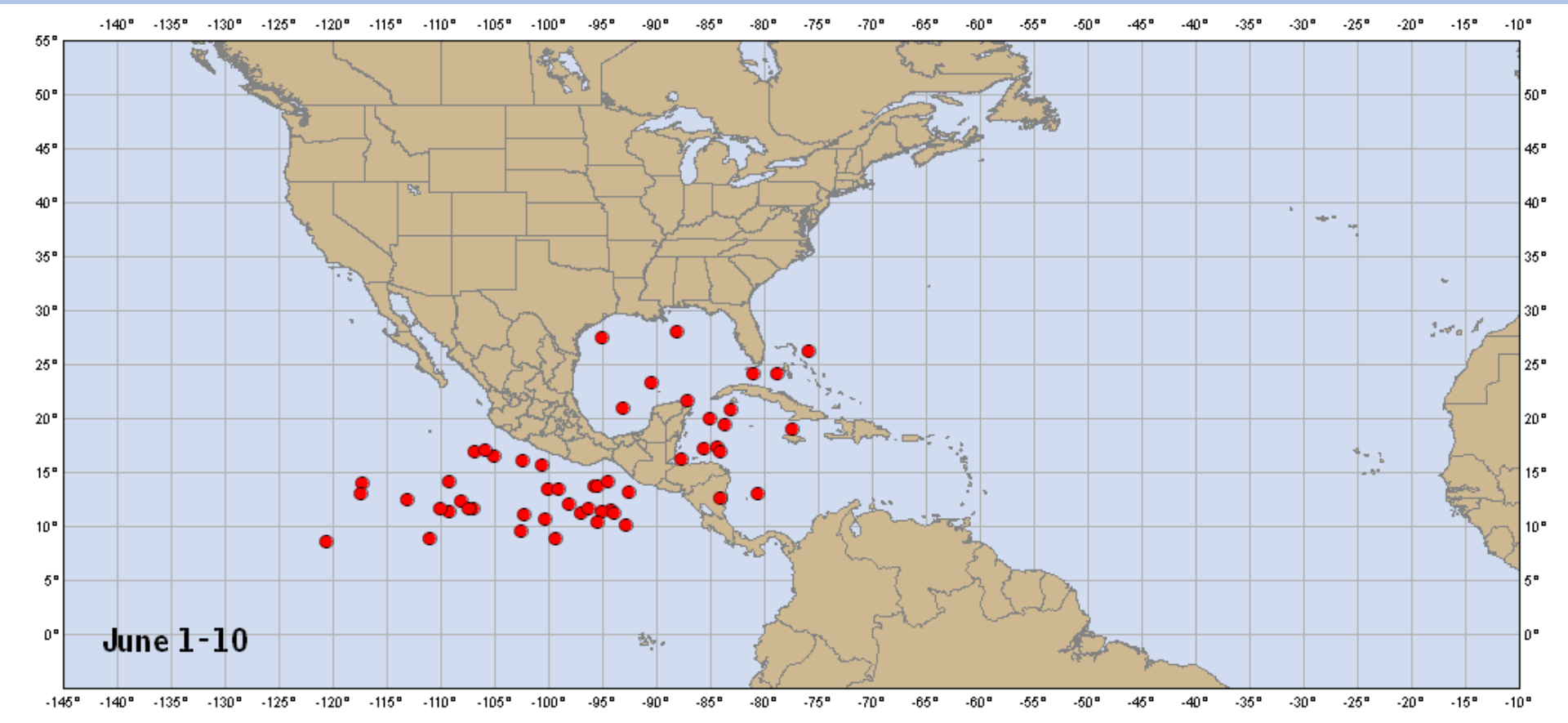


Seasonal Hurricane Outlook

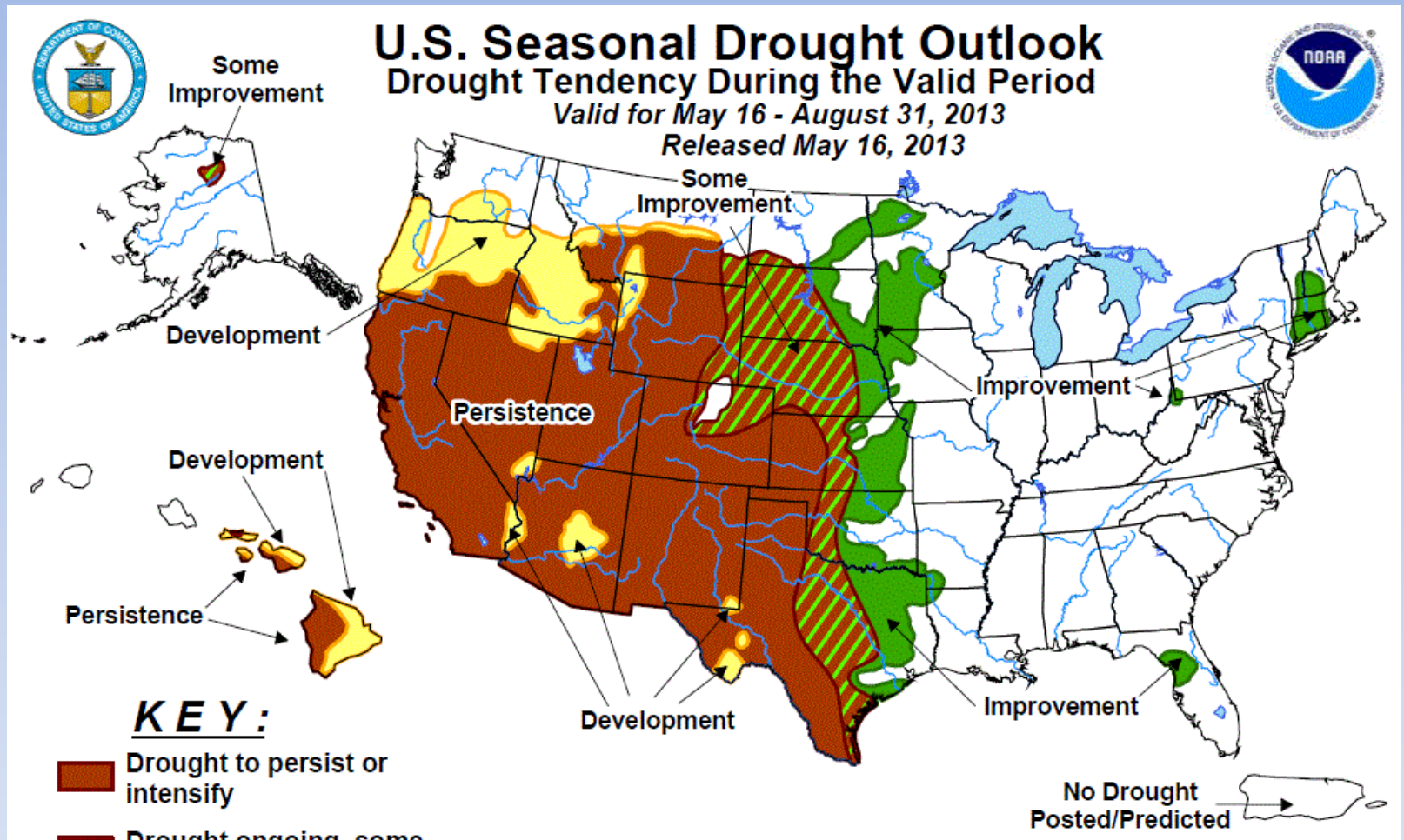
NOAA Seasonal Outlook

	2013 forecast (70%)	Climatology
Named storms	13-20	12
Hurricanes	7-11	6
Major hurricanes	3-6	3

June Formation Regions



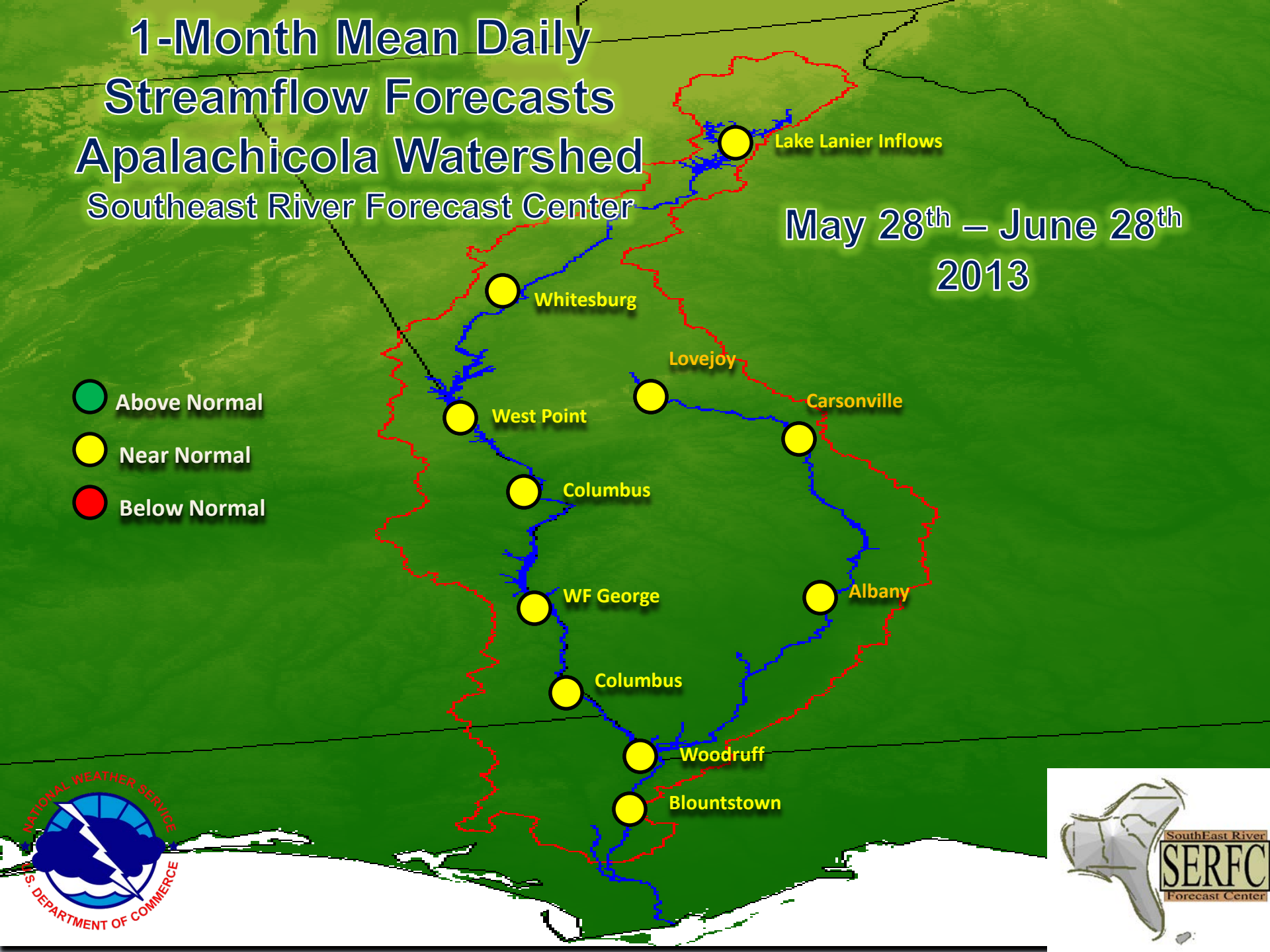
U.S. Drought Outlook



1-Month Mean Daily Streamflow Forecasts Apalachicola Watershed

Southeast River Forecast Center

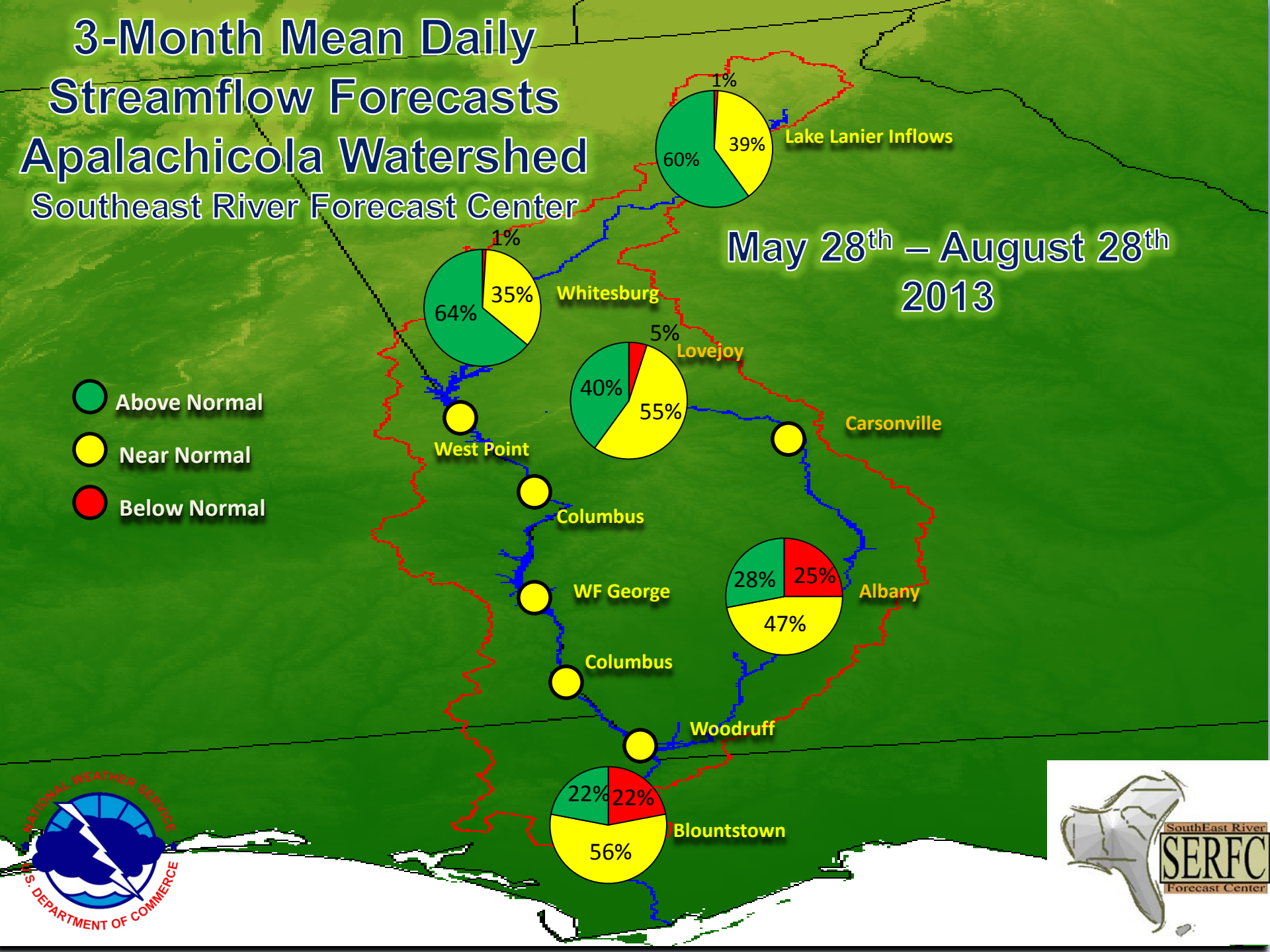
May 28th – June 28th 2013



3-Month Mean Daily Streamflow Forecasts Apalachicola Watershed

Southeast River Forecast Center

May 28th – August 28th 2013



MEI Forecast – Klaus Wolter

Season	Probability of La Niña	Probability of El Niño
May - Jul	33%	0%
Aug – Sep	36%	9%
Oct - Dec	69%	8%

Summary

- Although the past week has been relatively dry, there is still no drought in the ACF basin according to the US drought monitor
- For the past 90 days, there is as much as an 8-inch rainfall deficit in the southern part of the basin and as much as a 12-inch rainfall surplus in the north
- Although current streamflows are mostly normal, there are some gauges showing flows below the 25th percentile in the southern part of the basin

Summary

- 28-day average streamflows are above normal in the northern part of the basin and normal in the south
- Groundwater conditions are highly variable in the southern part of the basin, with Miller County, GA in the lowest 10th percentile
- Reservoir levels are above the top of conservation for Lake Lanier and West Point and near the top of conservation for WF George so overall water storage in the basin is excellent at this time
- Salinity levels in Apalachicola Bay are all below 20 ppt and mostly with the normal range

Summary

- The 5-day forecast calls for less than 0.25 inches through most of the basin
- Although sea surface temperatures in eastern tropical Pacific Ocean have cooled over the pat month, and ENSO phase is likely to remain Neutral through the fall
- The Climate Prediction Center and International Research Institute ENSO forecast nearly equal chances of El Niño and La Niña developing in the fall
- During Neutral years monthly rainfall is typically 3 to 8 inches in June and 4 to 8 inches in July, more rain falling in the South than the North

Summary

- The NOAA hurricane outlook calls for relatively active season, with 13 to 20 named storms and 3 to 6 major hurricanes
- The seasonal outlook calls for normal rainfall throughout the basin
- Both the 1- and 3-month streamflow forecasts call for mostly normal conditions throughout the basin, with a good chance for above normal streamflows in the northern part of the basin
- The MEI forecast indicates a strong probability that La Niña will develop in the fall, so we should keep a close watch on Pacific Ocean sea surface temperatures over the next few months

To subscribe, write to Chris Martinez:

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ACF Water

A product of the National Integrated Drought Information System (NIDIS) and the Southeast Climate Consortium (SECC). Providing water resource related information for the Apalachicola-Chattahoochee-Flint River Basin and the Southeast USA.

May 2013

Above average 2013 Atlantic hurricane season forecast

Source: NOAA

The Tropical Meteorology Project at Colorado State University issued its Atlantic hurricane forecast on April 10 and is projecting above-average hurricane activity for 2013. The team predicts 18 named storms, 9 of which will become hurricanes with 4 of these expected to be major hurricanes (winds greater than 110 miles per hour). In addition, the team is projecting above-average probability for a major hurricane to make landfall on the U.S. coast. The above average season is anticipated due to warmer than normal tropical Atlantic temperatures. Find Out More.

NIDIS

Southeast Climate Consortium

Links

National Integrated Drought Information System (NIDIS)

ACF Regional Drought Early Warning System

ACF Reservoir Levels and Forecasts

USGS WaterWatch

ACFStakeholders.org

Southeast River Forecast Center

References

Speakers

David Zierden, FSU

Brian McCallum, USGS

Bailey Crane, USACE

Chris Martinez, UF

Jenna Wanat, ANERR

Jeff Dobur, SERFC

Moderator

Keith Ingram, SECC

Additional information

General drought information

http://drought.gov
http://www.drought.unl.edu

General climate and El Niño information

http://agroclimate.org/climate/

Streamflow monitoring & forecasting

http://waterwatch.usgs.gov

http://www.srh.noaa.gov/serfc/

Groundwater monitoring

http://groundwaterwatch.usgs.gov

Thank you!

Next briefing – 25 June 2013, 1:00 pm EDT

Slides from this briefing will be posted at

http://drought.gov/drought/content/regional-programs/regional-drought-webinars

Please send comments and suggestions to:

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